

Houston Area Model United Nations Standard Committee

UNEP



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Topic B: International Regulations
Regarding Chemical Pollution
Houston Area Model United Nations 51
February 5 & 6, 2026



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Background Information

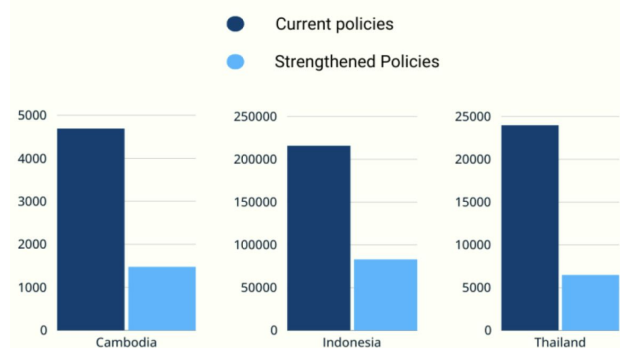
The United Nations Environment Programme (UNEP) is the leading global environmental authority, supporting 193 Member States in achieving ecological sustainability, reducing pollution, and implementing international environmental law. UNEP coordinates multilateral action, publishes environmental research, and promotes frameworks to prevent ecological harm from hazardous chemicals and waste (UNEP, 2025).

UNEP initiatives addressing chemical pollution include the Global Mercury Assessment, the Clean Seas Campaign, the International Resource Panel, and chemical safety support programs in vulnerable regions. These efforts align with multiple Sustainable Development Goals, including SDG 3 (health), SDG 6 (water safety), SDG 12 (responsible consumption), SDG 14 (marine ecosystems), and SDG 15 (land biodiversity) (UNEP, 2025).

Chemical pollution refers to the introduction of harmful chemical substances into air, water, soil, or ecosystems at levels that threaten environmental stability and human well-being. Chemical contaminants include heavy metals (such as mercury, lead, and cadmium), persistent organic pollutants (POPs), agricultural chemicals, industrial waste byproducts, and improperly disposed hazardous waste (UNEP, 2025; Selin, 2014).

Unlike many environmental threats, chemical pollution is often invisible, transboundary (crossing national borders), bioaccumulative (building up in organisms over time), and long-lasting in its ecological and economic effects (Selin, 2014; Stockholm Convention, 2001).

ANNUAL PREMATURE DEATHS DUE TO PM2.5 BY 2030



Source: UNEP, International Institute for Applied Systems Analysis

Caption: Graph showing annual premature deaths due to PM2.5 by 2030 in Cambodia, Indonesia, and Thailand.



A Brief History

Global concern surrounding chemical pollution first rose to international prominence in the 20th century, as industrialization rapidly expanded chemical manufacturing, trade, and waste byproducts. Unregulated chemical disposal and industrial runoff began affecting international waterways, ocean systems, soil composition, and human health, prompting the need for multilateral governance and environmental law (Selin, 2014).

The first major international action toward regulating hazardous chemical waste emerged with the Basel Convention in 1989, which established legally binding controls on the transboundary movement and disposal of hazardous wastes. The treaty sought to prevent chemical dumping in countries lacking waste infrastructure, ensure environmentally sound waste management, and reduce hazardous waste export from developed to developing states (Basel Convention, 1989) .

As chemical pollution concerns expanded beyond waste disposal to chemical trade and long-term environmental persistence, additional treaties followed. The Rotterdam Convention (1998) created a prior informed consent system to regulate hazardous chemical trade, particularly for chemicals banned or restricted domestically but still exported internationally (Rotterdam Convention, 1998).

In 2001, the Stockholm Convention on Persistent Organic Pollutants was adopted to eliminate or restrict POPs, chemicals that remain in ecosystems for decades and accumulate in food chains, including substances like PCBs, dioxins, and certain industrial byproducts (Stockholm Convention, 2001) .

The most health-specific chemical pollution treaty came in 2013 when the Minamata Convention on Mercury was introduced. The treaty set global standards to reduce mercury emissions, ban new mercury mines, phase out mercury in manufacturing, and regulate mercury disposal to limit neurological and ecological damage (Minamata Convention, 2013; Selin, 2014) .

Today, UNEP remains central to supporting treaty implementation, expanding global cooperation, and monitoring emerging chemical pollution risks (UNEP, 2025).



Topic Overview

Chemical pollution is a global challenge requiring shared governance because chemical contaminants move across borders through waterways, atmospheric deposition, ocean currents, and global trade systems. Many of the most harmful pollutants persist for decades, affect ecosystems and people far from their origin, and disproportionately impact developing countries and ecologically vulnerable regions (UNEP, 2025; Stockholm Convention, 2001; Basel Convention, 1989) .

While MEAs have built strong regulatory foundations, challenges remain in monitoring, enforcement, chemical alternatives, waste infrastructure, illegal chemical trade, accountability mechanisms, and equitable economic transitions for countries reliant on chemical manufacturing or exports (UNEP, 2025) .

Key areas of concern include:

1. **Transboundary chemical waste disposal** (Basel Convention, 1989)
2. **Persistent organic pollutants** that bioaccumulate in food chains (Stockholm Convention, 2001)
3. **Export of banned chemicals** to countries with limited regulatory capacity (Rotterdam Convention, 1998)
4. **Mercury contamination** is impacting neurological development and marine ecosystems (Selin, 2014; Minamata Convention, 2013)
5. **Industrial chemical runoff into international waterways** (UNEP, 2025).



Past United Nations Actions

The UN has responded to chemical pollution through multilateral treaties, international monitoring frameworks, chemical safety assessments, and funding mechanisms to support safe chemical alternatives and waste infrastructure.

Basel Convention (1989)

Controls hazardous waste export, requires environmentally sound disposal, and prevents toxic chemical dumping in countries without infrastructure (Basel Convention, 1989) .

Rotterdam Convention (1998)

Introduced prior informed consent for hazardous chemical trade, ensuring importing countries approve restricted chemical shipments before they are delivered (Rotterdam Convention, 1998).

Stockholm Convention (2001)

Bans or restricts persistent organic pollutants, requiring signatories to eliminate production of some POPs and manage existing stockpiles safely (Stockholm Convention, 2001) .

Minamata Convention on Mercury (2013)

Requires reductions in mercury emissions, bans new mercury mines, phases mercury out of manufacturing, and regulates mercury disposal to protect neurological and ecological health (Minamata Convention, 2013; Selin, 2014).

UNEP Global Mercury Assessments & Pollution Monitoring

UNEP publishes global chemical pollution reports, provides treaty implementation support, and monitors atmospheric and marine mercury deposition, heavy metal accumulation, and industrial chemical contamination (UNEP, 2025) .



Case Study: Transboundary Water Contamination (Industrial Chemical Runoff)

Many major rivers and ocean systems receive chemical runoff originating from industrial manufacturing zones. These contaminants travel through international waterways, affecting drinking water, marine ecosystems, and coastal economies. Monitoring has shown that enforcement is strongest when chemical tracking is internationally standardized and transparently reported (UNEP, 2025).



TOPIC B: QUESTIONS TO CONSIDER

1. What improvements can be made to international chemical waste monitoring and enforcement mechanisms to ensure treaty accountability? (Basel Convention, 1989; UNEP, 2025)
2. How can the global community accelerate adoption of safer chemical alternatives while ensuring economic equity for states reliant on chemical production or export? (UNEP, 2025)
3. What policy frameworks can be developed to prevent the illegal trade of domestically banned industrial or agricultural chemicals into countries with weaker import regulations? (Rotterdam Convention, 1998; UNEP, 2025)
4. How can atmospheric and marine mercury deposition tracking be strengthened to ensure compliance under the Minamata Convention? (Selin, 2014; Minamata Convention, 2013)
5. What role can UNEP play in coordinating enforcement, chemical alternatives, and infrastructure funding to prevent chemical accumulation in vulnerable ecosystems? (UNEP, 2025) .



TOPIC B APPENDIX & SOURCES

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