Forum: World Health Organisation

Issue: Mitigating the Public Health Impacts of Air Pollution Across Southeast Asia

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Introduction:

Air pollution is one of the leading public health concerns in the Southeast Asia region, according to the UN Environment Programme more than 90% of the region's 2.5 billion citizens breathe air that's considered unsafe by the WHO. 11 nations are constantly exposed to levels of PM 2.5 matter that's approximately up 6 times higher than annual healthy norm set by the WHO of 5 micrograms per cubic meter. (IQAir, 2026)

The region is experiencing rapid urbanisation, industrialisation, and agricultural expansion, which are the largest contributors to the PM 2.5 levels.

This topic is directly linked to the Sustainable Development Goals framework adopted by all UN members in 2015, specifically SDG 3 "Good Health and Well-Being" as well as SDG 11 "Sustainable Cities and Communities".

In this committee we will host debate on possible solutions on managing the air pollution across Southeast Asia, specifically in the countries of Bangladesh, Bhutan, DPRK, India, Maldives, Myanmar, Nepal, Sri Lanka, Thailand, Timor-Leste and focus on mitigating the public health concerns in those countries, with a focus on interconnected dimensions of the crisis - policies on forest fires and industrial emissions, various approaches and solutions.

Definition of key terms:

PM 2.5: Small particles with a diameter of 2.5 micrometres or smaller, that are invisible to the human eye and are produced by forest burning, various combustion processes, vehicle engines, as well as coal power plants. These particles are so small that the human body cannot defend itself against them. The PM 2.5 matter penetrates deep into the lungs and bloodstream and causes lung cancer, respiratory illnesses, heart strokes, premature death and more.

Household Air Pollution (HAP): It disproportionately affects women and young children, who spend most of their time indoors, close to cooking fires. (Healtheffects, 2025)

Transboundary Haze: Air pollution that originates in one country but crosses national borders, affecting the air quality and public health of neighbouring states. In Southeast Asia, this typically refers to the thick seasonal smog produced by large-scale forest and peatland fires.

Short-Lived Climate Pollutants (SLCPs): Refer to pollutants that remain in the atmosphere for a relatively short period but have significant impacts on both climate and human health. Examples include black carbon, methane, tropospheric ozone, and hydrofluorocarbons.

Air Quality Index: The Air Quality Index is a system used to measure and communicate air pollution levels to the public. AQI values are based on concentrations of pollutants such as PM2.5, PM10, ozone, nitrogen dioxide, and sulfur dioxide. Higher AQI values indicate greater health risks.

Emission Inventory: An emission inventory is a database or record that quantifies pollutants released into the atmosphere from different sources within a specific region and timeframe. Governments use emission inventories to monitor pollution sources and design environmental policies.

Slash-and-Burn Agriculture: Slash-and-burn agriculture is a farming method involving the cutting and burning of vegetation to clear land for cultivation. While inexpensive and widely used in some rural areas, the practice releases large amounts of smoke and particulate matter into the atmosphere and contributes significantly to transboundary haze pollution.

Ambient (outdoor) Air Pollution: Ambient air pollution refers to contamination of the outdoor environment by harmful substances such as particulate matter (PM2.5).

Background:

Air pollution has become one of the most serious public health and environmental challenges across Southeast and South Asia. Rapid urbanisation, industrial growth, increased vehicle use, coal dependency, and agricultural expansion have significantly worsened air quality over recent decades. Many cities in the region, including Dhaka, Bangkok, and New Delhi, frequently experience dangerous PM2.5 levels that exceed WHO safety guidelines. In addition to urban pollution, rural communities are heavily affected by household air pollution caused by the burning of biomass fuels for cooking and heating. Seasonal forest and peatland fires, particularly in

Indonesia, also contribute to severe transboundary haze that affects neighbouring countries such as Thailand, Malaysia, and Singapore.

The effects of air pollution are especially severe on public health. Extended exposure to PM2.5 and other pollutants causes respiratory illnesses, asthma, cardiovascular disease, strokes, lung cancer, weakened immune systems, and 6.7-8.1 million premature deaths globally each year. (HEI, 2026). Vulnerable groups such as children, the elderly, low-income communities, and individuals with pre-existing conditions are disproportionately affected. Air pollution also creates economic consequences through increased healthcare costs, reduced worker productivity, and disruptions to education and transportation during severe haze periods. Governments and international organisations have attempted to address the issue through initiatives such as the ASEAN Agreement on Transboundary Haze Pollution, clean energy investments, stricter emission regulations, and clean cookstove programmes. However, limited enforcement mechanisms, economic dependence on polluting industries, and unequal access to sustainable technology continue to restrict progress, making regional cooperation and long-term policy coordination essential.

Timeline of Key Events

Date	Event
1997-1998	Catastrophic haze crisis across Southeast Asia caused by large-scale fires in Indonesia during El Niño, approximately 20 million people affected.
2002	ASEAN Agreement on Transboundary Haze pollution.
2013	Severe haze crisis in Singapore and Malaysia.
2014	Indonesia ratifies ASEAN Agreement on Transboundary.
2015	Major haze crisis linked to Indonesian peat fires, schools closed, public health emergencies.
2019	Severe haze affects Malaysia, Indonesia, Singapore, and Thailand.
2021	The WHO strengthens air quality guidelines, lowers recommended PM2.5 limits.
2025	CCAC and ASEAN launch Clean Air and Climate solutions for ASEAN.

Major parties involved:

World Health Organisation (WHO): As the lead UN body on global health, WHO sets the air quality guidelines that serve as the international benchmark for safe pollution levels. WHO monitors health impacts, supports member states in developing national air quality policies, and produces key data through the Global Ambient Air Quality Database.

Association of Southeast Asian Nations (ASEAN): The primary regional intergovernmental body for Southeast Asia, comprising ten member states: Brunei, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam.

United Nations Environment Programme (UNEP): UNEP coordinates the Asia Pacific Clean Air Partnership (APCAP) and has produced landmark science-based assessments of air pollution solutions for the region. It is a key technical and advocacy partner for ASEAN member states and works closely with the WHO on integrated climate-health-pollution action.

Indonesia: The largest emitter of fire-related pollution in the region, owing to the scale of peatland and forest fires on Sumatra and Kalimantan. Indonesia is both a major source of transboundary haze affecting its neighbours and a country whose own population faces severe health consequences. It is also a major coal producer and consumer.

Health Effects Institute (HEI): A US-based independent research institute that produces the annual State of Global Air report, the most comprehensive global dataset on air pollution exposures and health impacts. HEI's data is widely cited by WHO, governments, and civil society, and its 2024 Asia regional report is a foundational reference for this debate.

World Resources Institute (WRI): A leading environmental research NGO active in Southeast Asia through initiatives such as the Clean Air Catalyst and the Southeast Asia Air Quality Community of Practice (SEA-AQ CoP). WRI works with city governments, national agencies, and international partners to build monitoring capacity and share best practices across the region.

India: The country experiences some of the world's highest urban air pollution levels due to industrial activity, transportation emissions, coal use, and agricultural burning.

Climate and Clean Air Coalition (CCAC): A voluntary partnership of governments, intergovernmental organisations, and NGOs focused on reducing short-lived climate pollutants. The CCAC has led major assessments of clean air solutions for ASEAN and provides technical and financial support to member states developing national mitigation strategies.

Relevant UN treaties, resolutions, and reports:

WHO Air Quality Guidelines (2021): Updated WHO global guidelines reducing the recommended annual PM2.5 safe limit from 10 micrograms per cubic meter to 5 micrograms per

cubic meter, reflecting new evidence on health impacts at lower concentrations. No Southeast Asian country currently meets this standard.

UN Resolution 73/235 - Towards a Pollution-Free Planet (2018): A UN General Assembly resolution calling on member states to address all forms of pollution and urging integrated, cross-sectoral responses. It provides a normative framework linking pollution to the Sustainable Development Goals.

Sustainable Development Goal 3 (Good Health and Well-Being) and SDG 11 (Sustainable Cities and Communities): As mentioned in the introduction, both SDGs include targets directly relevant to air quality. SDG 3.9 specifically calls for reducing deaths and illnesses from hazardous chemicals and air, water, and soil pollution and contamination by 2030.

ASEAN Agreement on Transboundary Haze Pollution (2002, fully ratified 2014): The only legally binding regional instrument specifically addressing air pollution in Southeast Asia. It requires member states to monitor fires, share information, and cooperate in preventing and responding to haze events. Enforcement mechanisms remain weak.

State of Global Air 2025 Report (Health Effects Institute / IHME): The most recent comprehensive global assessment of air pollution exposures and health burdens. The accompanying Asia regional report provides country-level data for all Southeast Asian nations and is an essential reference for delegates.

UNEP/APCAP/CCAC: Air Pollution in Asia and the Pacific: Science-based Solutions (2019): Identified 25 effective policy and technological measures for reducing air pollution while generating climate co-benefits. A subsequent ASEAN-specific assessment narrowed this to 15 priority measures for the region.

Clean Air and Climate Solutions for ASEAN Report (CCAC/ASEAN/UNEP, 2025): This report identifies 15 key measures that could ensure over 250 million people breathe clean air by 2030, achieving a 50–70% reduction in PM2.5 levels, alongside significant reductions in black carbon, methane, and HFCs.

Previous attempts to solve the issue:

ASEAN Agreement on Transboundary Haze Pollution (2002-present): Adopted in 2002 and fully ratified by all ten ASEAN member states in 2014, this was the first legally binding environmental agreement in Southeast Asia. It established obligations for member states to monitor and prevent fires, share real-time data, and offer mutual assistance during haze crises. However, the agreement hasn't been fully effective in practice. It lacks a strong enforcement mechanism, relies on self-reporting, and has no system of sanctions for non-compliance. Fire seasons of 2013, 2015, and 2019 all produced catastrophic haze events despite the agreement being in force. The core failure is that the agreement depends entirely on political will and domestic enforcement in source countries, where powerful agricultural and palm oil interests have historically resisted meaningful action.

Monitoring and Data Management: Officials across the region have been using digital tools like CanAIRy Alert to gain an understanding of air quality and be able to forecast the pollution peaks to take preventative action.

Transportation Shift: Introduction of electric buses, cars, boats, and other means of public transport, as well as campaigns and infrastructure changes to encourage more green movement.

Regulations on Industrial Emissions: Upgrading the industry to cleaner production tools and methods, transitioning from coal to clean energy sources, and setting clear guidelines for companies to follow and implement.

Clean Cookstoves Initiatives (2010s- present): Multiple international programmes, including those led by the Global Alliance for Clean Cookstoves (now Clean Cooking Alliance), have sought to accelerate the adoption of cleaner cooking technologies in Southeast Asia. These programmes provided subsidised stoves, trained local distributors, and ran public awareness campaigns.

Possible solutions:

Binding Regional Emission Standards: The most significant gap in the current framework is the absence of enforceable, quantified regional air quality targets.

Integrated Clean Energy Transitions: Given that coal combustion and household solid fuel use are two of the largest contributors to air pollution, solutions that simultaneously address energy access and pollution reduction offer high impact.

Health System Preparedness and Public Communication: Even with strong mitigation measures, some level of air pollution will persist for years. Member states should invest in health system capacity to manage pollution-related diseases.

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