3rd year
1 ISSUE

Newsletter HTAPC

Hub of Talents on Air Pollution and Climate

February-March, 2026

Hilights

HTAPC Accomplished Activities

- International Forum on Fire and Disaster Management (February 25, 2026)
- Meeting of the Bangkok Clean Air Action Plan Development Committee (March 2, 2026)
- BAQ 2026 Pre-Event Meeting (March 9, 2026)
- BAQ 2026 Conference (March 11, 2026)
- Public Consultation Meeting on the (Draft) Bangkok Pollution Reduction and Elimination Action Plan (March 20, 2026)

HTAPC Knowledge dissemination

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HTAPC
Hub of Talents on Air Pollution and Climate

GETTING TO KNOW THE DIRECTOR

ADVANCING THAILAND'S AIR QUALITY MANAGEMENT TO THE GLOBAL FRONTIER

Dr. Supat Wangwongwatana is a highly respected expert in air quality management who has played a pivotal role in Thailand for many years, spanning the fields of academia, administration, and public policy advocacy. Driven by a steadfast commitment since the early days, when air pollution expertise was scarce in Thailand, he dedicated himself to pursuing specialized education and a career in this field. Through this unwavering commitment, he has developed into one of the nation's most prominent figures in air quality management."

Throughout his career, Dr. Supat has been instrumental in laying the foundation for Thailand's air quality monitoring systems. He has championed pollution control measures across the power generation, industrial, and transportation sectors. His key contributions include upgrading fuel quality standards, implementing stricter emission standards for automobiles and motorcycles, and spearheading initiatives to mitigate PM2.5 pollution in urban areas. Furthermore, he has played a critical role in addressing pollution challenges in specific locations, such as the Map Ta Phut industrial estate and Suvarnabhumi Airport, while actively promoting regional cooperation to combat transboundary haze in ASEAN.

ROLE ON THE INTERNATIONAL STAGE

- Regional Haze Expertise: A key negotiator for the ASEAN Agreement on Transboundary Haze Pollution and contributor to the ASEAN Haze-Free Roadmaps (2020 & 2023–2030).
- Clear Sky Initiative: Co-led the Clear Sky Strategy (Thailand–Laos–Myanmar) to tackle Northern regional haze.
- Global Leadership: Former Chair of the Clean Air Initiative for Asian Cities (CAI-Asia).
- WHO Expert: Contributor to the WHO Air Quality Guidelines.
- International Recognition: Awarded by the U.S. EPA for successful air quality management in Bangkok.
- Scientific Advisor: Served two terms on the CCAC Scientific Advisory Panel.
- Ongoing Advocacy: Current Co-Chair of the Asian Co-benefit Partnership.

With his distinguished record and widespread recognition, Dr. Supat continues to be a prominent voice in academia and international air quality cooperation. Even after his retirement from government service, he remains dedicated to research, knowledge dissemination, and the strengthening of networks focused on air pollution and climate change. His ultimate goal is to ensure sustainable access to clean air for all, driven by the collaborative efforts of all sectors of society.

Dr. Supat Wangwongwatana
Director

HTAPC Accomplished Activities

International Forum on Fire and Disaster Management

On **February 25, 2026**, Hub of Talents on Air Pollution and Climate (HTAPC), led by the director, Dr. Supat Wangwongwatana, joined a team of center researchers in participating in the **"International Forum on Fire and Disaster Management."** Hosted by the Department of Disaster Prevention and Mitigation (DDPM), the forum aimed to enhance knowledge and understanding among personnel involved in disaster risk management, as well as to foster research and innovation to mitigate disaster impacts. The event sought to encourage participation between disaster management agencies and research organizations to exchange knowledge and experiences regarding various types of disasters affecting Thailand, while also promoting international cooperation in disaster risk management based on global standards.

On this occasion, **Dr. Supat Wangwongwatana served as a panelist and speaker on the topic: "Applying Science and Technology Innovations in Disaster Management."** He highlighted various technologies currently utilized to manage air pollution, such as the Air4Thai website and mobile application for reporting and forecasting air quality; the use of low-cost sensors for monitoring $PM_{2.5}$; the "Tam fire" system for real-time forest fire monitoring; the "Tam roy pao" system for tracking burn scars; and the implementation of a $PM_{2.5}$ early warning system via cell broadcast, which sends alerts directly to all mobile phones in a specific area simultaneously. These systems demonstrate **the application of technology to protect public health from air pollution, which is recognized as one of the man-made disasters of the modern world**. Furthermore, the center's researchers hosted an exhibition showcasing results from some of their ongoing projects to the forum participants.

HTAPC Accomplished Activities

The Meeting of the Bangkok Clean Air Action Plan Development Committee

The 1st meeting of the Bangkok Clean Air Action Plan Development Committee for 2026 was held on **March 2, 2026**, from 09:00 to 12:00, at the Nopparat conference room, 5th floor, Bangkok City Hall (Sao Chingcha). The meeting **aimed to collectively deliberate on the strategic direction for developing the ad hoc plan and the clean air management plan for Bangkok,** which serves as a vital mechanism for systematically addressing $PM_{2.5}$ issues and urban air pollution.

The meeting saw participation from a diverse range of relevant government agencies, including those under the Bangkok Metropolitan Administration (BMA) and central government agencies responsible for the environment, public health, transportation, energy, and industry, as well as other sectors involved in Bangkok's air pollution management. This participation underscored the importance of cross-agency integration in developing a comprehensive plan that effectively addresses practical implementation needs.

The committee acknowledged the order of their appointment and deliberated on the (draft) action plan for the reduction and elimination of air pollution in the Bangkok pollution control area. This draft serves as a key mechanism to establish the foundation for policy collaboration and management, **aiming to drive Bangkok toward having a concrete and sustainable clean air management plan that can be effectively put into practice**.

HTAPC Accomplished Activities

BAQ Pre-Event Meeting 2026

On **March 9, 2026,** Hub of Talents on Air Pollution and Climate (HTAPC), in partnership with Clean Air Asia and Breathe Cities, hosted the **"BAQ 2026 Pre-event: Clear Skies for Bangkok: From Vision to Action"** at the Princeton Hotel, Bangkok. The event reviewed Bangkok's progress as a designated Pollution Control Area, focusing on science-based policies and integrated pollution control measures.

The forum gathered a diverse group of stakeholders, including international and domestic experts, government representatives, and civil society, highlighting the need for multi-sectoral cooperation.

Key sessions featured an overview of Bangkok's action plans and a lecture by HTAPC Director Dr. Supat Wangwongwatana on **"Clean Air Action Plan for Bangkok: Mitigation Measures for Pollution Control Zone."** Dr. Supat also facilitated a workshop addressing major pollution sources, including transportation, biomass burning, and transboundary haze, to develop concrete, actionable solutions.

This meeting represents a vital step in unifying knowledge and efforts to drive Bangkok toward sustainable development, better public health, and clean air.

HTAPC Accomplished Activities

BAQ 2026 Meeting

On **March 11, 2026,** at the United Nations Conference Centre (UNCC), Bangkok, Dr. Supat Wangwongwatana, Director of Hub of Talents on Air Pollution and Climate (HTAPC), participated in the **Better Air Quality (BAQ) 2026 Conference**. **During the "Pathways for Clean Air and Clean Energy"** session, which featured regional insights from the Philippines, Indonesia, and Vietnam, Dr. Supat presented on "Policy Levers for Clean Air and Clean Energy Transition." He outlined policy strategies to enhance emission standards, strengthen regulatory enforcement, and utilize economic mechanisms to effectively facilitate the transition to clean energy.

The BAQ 2026 Conference highlighted that **air pollution remains a critical challenge across the Asia-Pacific region, impacting public health, the economy, urban development, and climate change**. The session emphasized the necessity of science-based data, robust monitoring systems, investment in clean energy and pollution control technologies, and international cooperation **to accelerate the shift from policy commitments to concrete action**. Dr. Supat's participation underscores HTAPC's pivotal role in **bridging academic expertise with policy advocacy and reaffirms the importance of regional collaboration in achieving sustainable goals for clean air and clean energy**.

HTAPC Accomplished Activities

Public Consultation Meeting on the (Draft) Bangkok Pollution Reduction and Elimination Action Plan

On **March 20, 2026,** Hub of Talents on Air Pollution and Climate (HTAPC) and the Bangkok Metropolitan Administration (BMA) hosted **a public consultation for the (Draft) Action Plan for the Reduction and Elimination of Air Pollution in the Bangkok Pollution Control Area (2027–2032)** at the TK Palace Hotel & Convention. **This meeting sought to gather diverse input to refine the plan**, which is crucial for systematically tackling Bangkok's air pollution.

The session engaged a broad spectrum of stakeholders, including government officials, the private sector, academics, and civil society, emphasizing a multi-sectoral approach to policy development.

Participants discussed the draft plan's core strategies, providing feedback to ensure the final version is comprehensive, well-integrated, and highly actionable. The meeting's ultimate goal is to strengthen pollution control measures, ensuring long-term improvements in air quality, public health, and sustainable urban development.

Study of the Relationship Between $PM_{2.5}$ and the El Niño–La Niña Phenomenon

This study investigated the relationship between $PM_{2.5}$ pollution and the El Niño–La Niña phenomenon (ENSO) in Thailand. It pointed out that $PM_{2.5}$ levels were influenced not only by pollution sources, but also by meteorological factors such as rainfall, wind speed and direction, temperature inversions, planetary boundary layer height (PBLH), and topography, all of which affected the accumulation and dispersion of air pollutants.

The findings showed a clear connection between ENSO and $PM_{2.5}$ concentrations in Thailand. During El Niño events, Thailand tended to experience below-average rainfall, subsiding air, lower PBLH, and more hotspots, creating favorable conditions for pollutant buildup and resulting in higher $PM_{2.5}$ levels. In contrast, during La Niña events, above-average rainfall, rising air, and higher PBLH helped disperse pollutants more effectively, leading to lower $PM_{2.5}$ concentrations.

The study also indicated that sea surface temperature anomalies were linked to rainfall anomalies, which in turn shaped the meteorological conditions associated with haze formation, especially during Thailand's dry season. Another important finding was that PBLH decreased first over central Thailand from November and later shifted to northern Thailand during March–April, corresponding to the periods when each region faced its most severe $PM_{2.5}$ episodes.

A key mechanism explaining this relationship was the Walker Circulation, which influenced air movement, rainfall, humidity, and pollution dispersion across Southeast Asia. Overall, the study concluded that El Niño was associated with more severe $PM_{2.5}$ pollution in Thailand, while La Niña was associated with lower pollution levels. These findings were valuable for improving early warning systems, haze forecasting, and air quality management.

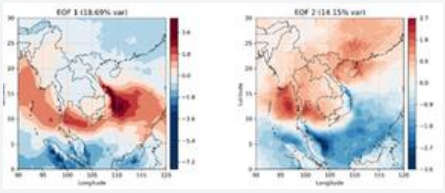

Figure 1 Rainfall Anomalies in December: EOF Mode 1 – Mode 2

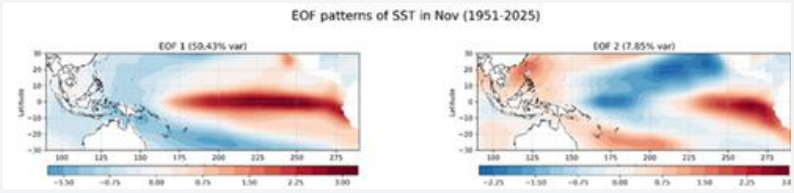

Figure 2 Sea Surface Temperature Anomalies in December: EOF Mode 1 – Mode 2

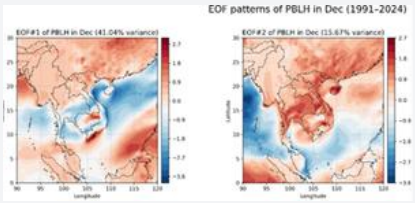

Figure 3 PBLH Anomaly Patterns in December: EOF Mode 1 – Mode 2

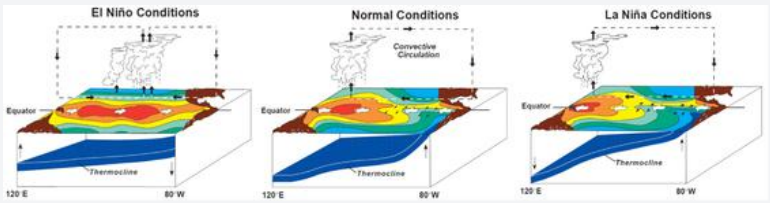

Figure 4 Schematic Diagram of the Walker Circulation Mechanism

Article by: Charoon Laohalertchai

Be part of our initiative

Hub of Talents on Air Pollution and Climate (HTAPC)

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