



Transboundary haze pollution problem in Southeast Asia

Transboundary haze is a recurring air pollution issue in Southeast Asia caused mainly by slash-and-burn agriculture and peatland fires, particularly in Indonesia, that drifts across national borders, leading to severe health, environmental, and economic impacts. ASEAN has experienced periodic episodes of transboundary haze pollution resulting from land and forest fires caused by seasonal burning to clear vegetation on the ground for various purposes. Despite more than a decade since the ASEAN Haze Agreement came into force, the problem still recurs and sometimes with serious consequences to health, transportation, tourism, and other activities. What is urgently needed is a reframing of the way the issue is being currently addressed, i.e. mostly tackling at the tail-end of the problem of putting out the fires after they have been lit rather than preventing or curbing the illegal burning practices at source. It also represents balancing economic development initiatives with environmental protection and international relations concerns.

ROOT CAUSES OF TRANSBOUNDARY HAZE

One of the main causes of smoke haze is the result of uncontrolled burning to clear the land for other development purposes such as for growing agricultural crops like corn and plantation trees such as pulpwood, rubber or oil palm. Where legal restrictions are absent due to the lack of appropriate rules prohibiting the use of fires for land clearance or otherwise where enforcement of such regulations is weak, then burning becomes the economically cheapest way to clear land without incurring heavy penalties and thus further encouraging such environmentally and socially unsound practices. Moreover, the draining of peatlands found in many parts of Southeast Asia and especially on the Indonesian islands of Sumatra and Kalimantan for development greatly increases the risk of fire and haze due to peat's smoke generating characteristics when burnt and the fact that it can burn through the peat seam layers underground which are out of sight and thus become difficult to control. Other factors which could also contribute to the problem include overlapping rules and regulations among the concerned government agencies thus creating gridlock and/or loopholes in the process, the lack of adequate information and/or awareness, limited resources (capital, equipment, personnel,

amongst others) as well as the lack of political will to tackle the problem, the strong patronage and/or special links between the main perpetrators and the relevant authorities and therefore overriding the rule of law and good governance, and the associated private and/or individual profit motives including corruption practices such as bribery at the expense of social and/or environmental costs and public goods at large. In brief, the basic issue could be summed up as lax compliance by land developers and poor enforcement and the lack of capacity on the part of concerned authorities including having weak judicial systems. It also reflects the need to balance economic development initiatives with appropriate environmental protection concerns as well as maintaining good international relations and image including corporate social responsibility and/or socially responsible investing. The impacts resulting from fires and transboundary haze, however, could be significant and include: Losses to property and/or degradation of natural resources, forest, biodiversity, and ecosystem including damage to agricultural production. Increase in emissions of greenhouse gases and other hazardous pollutants. Harmful effects on health including injuries and fatalities to humans and animals leading to untimely ailments and even early deaths. Adversely affecting various modes of transport operations due to safety concerns including accidents arising from poor visibility. Negative impact on tourism and business. Rights to clean air, good health, and quality livelihoods being denied to numerous affected communities and ordinary citizens. Strained neighbourly relations amongst ASEAN member countries, if not others. Seriously dent the image of ASEAN solidarity and effectiveness.

THE IMPACTS OF TRANSBOUNDARY HAZE

Transboundary haze is a recurring environmental disaster in Southeast Asia, primarily caused by land and forest fires, particularly in Indonesia and Malaysia, for agricultural purposes. It has severe impacts on health, the environment, and the economy.

Health impacts: Transboundary haze is a major public health crisis. The smoke contains high levels of fine particulate matter (PM_{2.5}), which can penetrate deep into the lungs and cause significant health problems.

Respiratory and cardiovascular illnesses: Exposure to haze is directly linked to a sharp increase in respiratory ailments like asthma, bronchitis, and acute respiratory



infections. It also exacerbates cardiovascular conditions, leading to an increased risk of heart attacks and strokes.

Premature deaths: Severe haze events have been associated with a rise in premature deaths, with some studies estimating tens of thousands of deaths across the region from conditions related to the poor air quality.

Other symptoms: Haze also causes immediate physical symptoms, including eye and skin irritation, sore throat, and headaches, and can lead to psychological stress among the affected population.

Environmental Impacts: The fires that cause the haze are a major source of environmental degradation, harming ecosystems and contributing to climate change.

Deforestation and Biodiversity Loss: The “slash-and-burn” clearing method destroys vast areas of forests and peatlands, which are critical habitats for many endangered species, including the orangutan. This leads to a severe loss of biodiversity.

Increased greenhouse gas emissions: The burning of carbon-rich peatlands releases enormous amounts of carbon dioxide (CO₂) and other greenhouse gases into the atmosphere. The 2015 haze crisis in Indonesia alone was estimated to release more daily emissions than the entire U.S. economy.

Soil degradation: Fires can sterilize and degrade soil quality, making it less fertile and more vulnerable to erosion.

Economic impacts: The economic costs of transboundary haze are staggering, causing billions of dollars in losses across the region.

Disruption of business and tourism: Haze severely disrupts daily life and economic activity. Airports often face flight delays and cancellations due to poor visibility, impacting tourism and logistics. Tourism, a vital sector for many Southeast Asian economies, sees a sharp decline during haze seasons.

Productivity and healthcare costs: The rise in haze-related illnesses leads to increased healthcare costs and a loss of productivity as workers stay home or work less efficiently. Schools are often forced to close for days or weeks, disrupting education.

Agricultural damage: The fires and smoke can damage crops and reduce agricultural yields, directly affecting the livelihoods of local farmers. The fires themselves destroy valuable plantations and agricultural land.

Political and social impacts: Transboundary haze is a significant source of diplomatic tension and social strife in the region.

Strained international relations: The recurring nature of the haze has often strained diplomatic ties between

affected countries, particularly between Indonesia and its neighbors, Malaysia and Singapore. The ASEAN Agreement on Transboundary Haze Pollution was signed in 2002 to foster regional cooperation, but its effectiveness has been limited.

Social disruption: The persistent haze creates a sense of helplessness and frustration among the public, who feel that their right to clean air and a healthy life is being denied.

POTENTIAL SOLUTIONS

Transboundary cooperation is important when natural resources and environmental spaces are shared. It helps promote better understanding and exchange of knowledge and concerns between neighbouring countries and leads to collective responses to shared problems such as transboundary haze pollution, allowing new opportunities and ways of overcoming these common threats. The ASEAN Agreement on Transboundary Haze Pollution (AATHP) which came into force in 2003 received a boost when Indonesia submitted its instruments of ratification to the ASEAN Secretary General on 20th January 2015, thus completing the ratification process of this Agreement by all 10 ASEAN member countries. With Indonesia finally coming on board, more concerted and cooperative actions should hopefully follow to address the problem. However, one major shortcoming of the AATHP is that there is no sanction clause for failure to meet the stipulated obligations, it is after all the ASEAN Way of resolving disputes diplomatically, through consultation and negotiation. Perhaps that is one reason why Singapore enacted its own Transboundary Haze Pollution Law in 2014 which seeks to take civil and criminal liability actions against entities responsible for causing or contributing to transboundary haze pollution in Singapore. Effective implementation of this measure is likely to be problematic due to the extra-judicial, territorial, and national sovereignty issues involved coupled with the difficulty of making irrefutable attribution or correlation between cause and effect of the problem. However, it could readily serve as a ‘warning shot’ to highlight the urgency of tackling the issue in a more serious and timely manner. Just like merely institutionalising a zero burning policy across the board, while desirable, is probably not going to be a fully effective solution by itself but can help direct appropriate attention and response pertaining to the matter.

Nevertheless, further actions in areas such as the following are required: More efficient and timely sharing of information, especially identifying specific locations on land clearance, hotspots, and actual burning areas as well as haze movement among ASEAN member countries which would facilitate early



detection and enhance quick response and thereby help address the problems instantly rather than causing them to get out of control. One major constraint in this connection is the release of such vital information in a timely and responsive manner. A clear example of this is an earlier decision to pursue setting up the ASEAN Subregional Haze Monitoring System (HMS) for the above-stated purpose. However, and concerns over sharing of information on sensitive matters pertaining to territorial integrity and sovereignty and extra juridical issues has slowed the process. So although the concept of having the HMS was discussed before, its operationalisation has been stalled. Strictly enforcing relevant laws and policies pertaining to the fire and/or haze problem, streamlining institutional capacity, and introducing more simplified procedures that enhance the cost effectiveness of implementation. It would also be worth considering having some kind of sanction provision for noncompliance.

ASEAN member states do have laws governing prohibition and/or limitation on burning vegetation especially during certain restrictive conditions and/or time periods. However, the problem is they are not always strictly enforced often due to dereliction of duty by the concerned authorities and/or overlapping jurisdiction by agencies pertaining to the issues at hand. In some cases, there may be a lack of capacity to adequately cover the areas in question coupled with meagre resources available to track developments and make appropriate interventions. One bottleneck that has occurred especially in the rapid deployment of needed resources is the amount of bureaucratic red tape that is encountered in obtaining the necessary clearances. So much time is lost in the approval process, thus delaying the implementation of the required urgent actions.

Finally, for the rules and regulations to be meaningful and enforceable, strict compliance and enforcement coupled with appropriate sanctions and/or penalty provisions are necessary. However, this is an area where many ASEAN countries are lacking and weak at both the national level as well as at the regional level including in the ASEAN Haze Agreement. Vigorous promotion in conjunction with the provision of incentives for encouraging non-burning alternatives for clearing land, particularly in the sustainable management of peatlands and raising awareness of the potential cobenefits that could be derived through such practices which would be for mutual interest and bring about collective gain. Attempts have been made in both ASEAN subregional frameworks for fighting the fire and/or haze problem to engage the concerned

private sector more pro-actively and vigorously in finding solutions which could yield win-win results. Properly internalising the externalities and costs of burning in the business models of the relevant corporate sector through a suitable combination of rewards and punishment would encourage a shift towards adopting less damaging methods of land clearing from economic, environmental, and social points of view.

Governments of ASEAN countries should also institutionalise policies and legislation that would provide suitable incentives and/or disincentives to move in a more desirable and sustainable path of development. Improving coordination to develop good understanding, close rapport, and active cooperation including enhancing capacity and awareness between all relevant stakeholders such as government agencies, private developers, small farmers, civil society groups, and local communities on the fire and haze issue, including the possible causes and the potential solutions. It goes without saying that to successfully address the fire and haze issue in ASEAN requires a multistakeholder approach and framework involving all relevant parties and on an equitable footing or representation. A constructive enabling environment needs to be created so that all concerned entities feel they are properly informed and have a meaningful stake in solving the problem. Having appropriate corporate social responsibility initiatives and/or socially responsible investing could also help in the process and support moving in the right direction. Educating ASEAN and other consumers about the causes and effects in the chain of events or complete life cycle analysis of the entire production systems from agricultural and/or forestry land with links to the fire and/or haze problem and its corresponding consequences leading to more active consumer understanding, engagement, and action for adopting more environmentally and socially sound solutions. Building up such like-minded coalitions of the willing is essential if there is any hope of combating the fire and haze problems in the Southeast Asian region. Adopting eco-labelling standards for encouraging more sustainable consumption and production processes by the public at large would go a long way in sending the right signals to the producers of agricultural and forestry land to implement more environmentally friendly non-burning methods of cultivation.

ASEAN REAFFIRMS COMMITMENT TO TACKLE TRANSBOUNDARY HAZE WITH FINANCIAL FRAMEWORK



The ASEAN Investment Framework for Haze-Free Sustainable Land Management (AIF) aims to mobilise an estimated of USD 1.5 billion by 2030 to address the root causes of the transboundary haze across sub-region. Complimenting these efforts, the ASEAN Secretariat with Global Environment Centre (GEC) under IFAD-financed Measurable Action for Haze-Free Sustainable Land Management in Southeast Asia (MAHFSA) Programme has identified a total of USD 1,231,000 million from the 39 ongoing projects and 23 identified pipeline projects aligned with the AIF objectives. This highlights the need for coordinated efforts and resource mobilisation following the endorsement of AIF in August 2023.

The Partners Dialogue on AIF-HFSLM – Sustainable Investment in Tackling Haze for Better Living took place on 13th August 2024, held in parallel with the 9th ASEAN Task Force on Peatlands (ATFP) in Bangkok, Thailand. This Dialogue served as a platform to engage stakeholders, share inputs and explore potential strategies to support the development of the Implementation Plan for the AIF, as well as to highlight ASEAN commitment to enhance investment in sustainable practices. Marking the first event for the AIF since its endorsement, this Dialogue signifies a crucial step toward realising the shared vision of a haze-free and sustainable ASEAN by 2030.

ASEAN reaffirmed their commitment to supporting the partners of AIF to ensure the smooth coordination from ASEAN perspective. ASEAN Secretariat's Head of Environment, Dr. Vong Sok reiterate the framework's 5 broad objectives designed to address peatland and haze-related matter, offering various opportunities for partners to participate according to their interests and priorities. He also expressed his appreciation for the active participation of partners in joining the initiative. AIF aligns with other ASEAN frameworks such as the Second ASEAN Peatland Management Strategy (APMS 2023-2030), the Second ASEAN Cooperation on Transboundary Haze Pollution Control with Means of Implementation (ASEAN Haze-Free Roadmap 2023-2030) and the ASEAN Sustainable Finance Taxonomy. It emphasises sustainable financing, community empowerment and integrated land management.

The Dialogue's discussion session was preceded by six presentations from Global Green Growth Institute (GGGI), IFAD, Asian Development Bank (ADB), Sustainable Rice Platform (SRP), USAID Partnerships for Green Investment (PAGI), and The Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ-Thailand) presented their ongoing and pipeline projects, highlighting their potential alignment with the AIF.

A total of 35 representatives from 17 international stakeholders and funding partners participated in the Partners Dialogue on AIF – Sustainable Investment in Tackling Haze for Better Living. Some of the key suggestions and recommendations raised by the participants focused on the importance of linking sustainable land management initiatives to prevent duplication and enhance synergy among projects. Participants urged the mobilisation of donor forums and national investment agencies to better coordinate efforts and maximize the impact of available resources. Other points highlighted are challenges in peatland carbon projects and critical role of the ASEAN Secretariat in guiding the AIF initiatives. Another key suggestion included establishing a directory of partners and a registry of projects to ensure transparency and collaboration, as well as strategic use of existing ASEAN mechanisms.

Participants also highlighted the need for additional funding, proposing innovative approach such as utilising the ASEAN Regional Clean Air Fund and establishing a sustainable rice financing facility. Participants also suggested linking the AIF to Partnerships for Green Investment (PAGI), a new USAID-funded project aimed at supporting sustainable land use practices in Southeast Asia, focusing on emissions reductions, climate resilience, biodiversity protection, inclusiveness, and benefit sharing. The participants stressed the importance of engaging a broader range of stakeholders, including urban dwellers in funding mechanisms, which is crucial for the success of these initiatives.

The Dialogue marks a significant milestone in the collaborative efforts to tackle the transboundary haze issue in ASEAN. As the region moves toward a haze-free future by 2030, the commitments made by stakeholders and the active participation of diverse partners demonstrate the importance of unified action. With continued engagement, resource mobilization, and strategic alignment of projects through frameworks like AIF, ASEAN is ready to strengthen its sustainable land management practices and ensure a healthier, haze-free environment for its people. The road ahead requires collective action, innovative solutions, and long-term funding to address the root causes of haze, however this Dialogue has set a promising foundation for transformative impact ■

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