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Strengthening regional cooperation on air pollution in Asia and the Pacific

Note by the secretariat*

Summary

This paper briefly presents opportunities to strengthen regional cooperation on air pollution following the second International Day of Clean Air for blue skies in September 2021 and subregional dialogues in January 2022, and highlights areas which could be included as elements of a regional modality on air pollution in Asia and the Pacific.

* This document is being issued without formal editing.

I. The urgency to tackle air pollution in Asia and the Pacific

1. Nearly 90 per cent of the population of the Asia Pacific region regularly breathe air considered by the World Health Organization to be unsafe. Globally, more than 7 million premature deaths are attributed to air pollution, with the greatest number (two-thirds) in the Asia Pacific region.[1]

2. Air pollution is a growing environmental crisis, with 97 of the 100 cities with the worst air quality found in the region, and unstainable development patterns contributing to poor air quality. Many of the pollutants impacting air quality are also climate pollutants, making clean air actions critical to addressing climate change.

3. Air pollution has disproportionate health impacts on vulnerable populations, including women and children. Gender specific impacts from air pollution are evident, affecting maternal health and increasing the risk of pregnancy losses.[2] Fetal growth and child development are impacted, and globally, more than 600,000 children die each year from diseases related to air pollution.[3]

4. The economic cost of air pollution globally has been estimated at $3.5 trillion, attributable to health-related costs, loss of workforce and damage to crops and infrastructure. In South Asia alone, the costs are estimated at more than $600 billion, while in East Asia and the Pacific such costs exceeded 2.3 trillion.[4]

5. The Economic and Social Commission for Asia and the Pacific (ESCAP) member States recognized the pressing environmental challenge posed by air pollution through its adoption of Resolution 75/4 on *"Strengthening regional cooperation to tackle air pollution challenges in Asia and the Pacific"*, which highlighted the rise in premature deaths, and risks to livelihoods and sustainable development in the region.

6. Reducing air pollution is integral to achievement of the 2030 Agenda for Sustainable Development, with relevant targets in Goal 3 (Good Health and Wellbeing), Goal 7 (Affordable and Clean Energy), Goal 9 (Industry, Innovation and Infrastructure), Goal 11 (Sustainable Cities and Communities), Goal 12 (Responsible Consumption and Production), Goal 13 (Climate Action) and Goal 17 (Partnerships for the Goals).

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1 WHO global air quality guidelines. Particulate matter (PM2.5 and PM10), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide. Geneva: World Health Organization; 2021.Available at https://www.who.int/publications/i/item/9789240034228 (accessed on 4 March 2022).

2 Clear the Air for Children. New York: UNICEF; 2016. Available at https://www.unicef.org/media/49966/file/UNICEF_Clear_the_Air_for_Children_30_Oct_2016.pdf (accessed on 4 March 2022).

3 Ibid.

4 World Bank and Institute for Health Metrics and Evaluation. 2016. The Cost of Air Pollution: Strengthening the Economic Case for Action. Washington, DC: World Bank. Available at https://openknowledge.worldbank.org/bitstream/handle/10986/25013/108141.pdf?sequence=4&isAllowed=y (accessed 7 March 2022) (Estimated costs are for calendar year 2013).

II. Challenges to achieve clean air in Asia and the Pacific

7. Economic growth and rapid urbanization in the region have been accompanied by an increase in air pollution. Between 1990-2015, the region saw an estimated 19 per cent increase in annual population weighted PM2.5 concentrations, nearly double the 10 per cent global increase over the same period.[5]

8. As the region has developed, combustion of fossil fuels has remained a primary source of energy for many countries, yet it is one of the most significant sources of air pollution. Roughly 85 per cent of electricity is sourced from coal,[6] and as energy demand is expected to increase, much resulting from urbanization, the decoupling of growth and emissions will be a challenge for many countries, requiring energy transitions and integrated climate and clean air policies.

9. Industrial activities, agriculture and crop burning, open burning of waste, traffic congestion, biomass burning for heating, construction activities and sand and dust storms also contribute to air pollution. Inadequate national policies, weak air quality standards and lack of enforcement of air quality regulations are areas that need the attention of member States. According to the United Nations Environment Programme, without policy interventions to address air pollution, population-weighted mean exposure to PM2.5 would grow by almost 50 per cent by 2030.[7]

10. The transboundary nature of air pollution presents significant challenges for countries. Often the sources of air pollution, such as crop burning, originate well outside the areas of impact. Cross-border air pollution, influenced by climatic and weather conditions, requires effective multi-lateral cooperation.

11. Much of the air pollution in Asia Pacific is most evident in urban areas across the region. Local authorities, however, have limited resources and policy tools which could be independently deployed to address the multiple sources of pollutants affecting their jurisdictions. Vertical integration of climate and clean air policies and coordination among multiple levels of government is necessary to ensure air quality policies are effective in urban areas.

12. Several subregional initiatives to combat air pollution exist. Examples include the North-East Asia Clean Air Partnership, organized under the North-East Asian Subregional Programme for Environmental Cooperation[8], the Acid Deposition Monitoring Network in East Asia, the Association of Southeast Asian Nations (ASEAN) Agreement on Transboundary Haze Pollution,[9] and the Malé Declaration on Control and Prevention of Air Pollution and Its Likely

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5 UNEP (2019). Air Pollution in Asia and the Pacific: Science-based Solutions.

6 UN.ESCAP (2016). The economics of climate change in the Asia-Pacific region. Retrieved from: https://hdl.handle.net/20.500.12870/3099.

7 UNEP (2019).

8 NEASPEC was established in 1993 by six member States- China, Democratic People's Republic of Korea, Japan, Mongolia, Republic of Korea, the Russian Federation.

9 ASEAN Agreement on Transboundary Haze Pollution is an agreement signed in 2002 by the member states of the Association of Southeast Asian Nations to reduce haze pollution.

Transboundary Effects for South Asia,[10] which calls for regional cooperation to address air pollution and its impacts. These existing multilateral cooperation efforts on air quality have varying degrees of scope and effectiveness and focus mainly on data collection and exchange of information.[11]

III. Opportunities for strengthened cooperation on air pollution

13. In response to General Assembly Resolution 74/12, which designated 7 September as the International Day of Clean Air for blue skies, regional commemorations were held in 2020 and 2021. In the commemorations, member States expressed support for accelerating action and strengthening cooperation. ESCAP conducted subregional dialogues in January 2022, during which potential elements for regional cooperation were discussed.

14. ***Air Quality Standards***. National ambient air quality standards have been adopted by many countries in the region. Various standards and measures address particulate matter, nitrogen oxide, methane, sulphur dioxide, carbon monoxide, ozone, heavy metals like mercury, lead and cadmium and various polycyclic aromatic hydrocarbons, which result from burning of fuels, waste and other materials. However, the values of standards often differ from country to country, as do the number of substances and averaging times utilized for monitoring. Harmonized or common standards across the region would provide a basis for coherent approaches to measuring and monitoring of pollutants.

15. ***Open Data Sharing***. Advancements in air quality monitoring systems and machine learning have provided the ability to accurately identify sources and types of air pollutants, the dynamics of transboundary effects and predictive models with high levels of confidence on air pollution concentrations. Accurate emissions inventories are essential, yet some countries still lack reliable information on national emission inventories. Recent satellite technologies, such as the Republic of Korea's Geostationary Environment Monitoring Spectrometer, generate information and imagery to document air quality across the region. Open sharing of such data will strengthen the ability for countries to develop science-based policies.

16. ***Exchange of Best Practices and Solutions***. Numerous solutions to combat air pollution exist. In 2019, the United Nations Environment Programme and the Climate and Clean Air Coalition published *Air Pollution in Asia and the Pacific: Science-based Solutions,* which identified 25 science-based clean air measures for various sectors, including agriculture, industry, transport, waste, and energy. Adopting appropriate measures are essential to protecting human health, economies, food systems, ecosystems and contributing to climate action. The exchange of best practices and implementation of these clean air measures can be an effective element of subregional and regional cooperation.

[10] The Malé Declaration, Bangladesh, Bhutan, India, Iran, Maldives, Nepal, Pakistan and Sri Lanka.

[11] Kauffmann, C. and C. Saffirio (2020), "Study of International Regulatory Co-operation (IRC) arrangements for air quality: The cases of the Convention on Long-Range Transboundary Air Pollution, the Canada-United States Air Quality Agreement, and co-operation in North East Asia", OECD Regulatory Policy Working Papers, No. 12, OECD Publishing, Paris.

17. ***Capacity Building***. Implementation of clean air policies and solutions will require capacity-building efforts at multiple levels, ranging from national governments to enact national legislation and enforcement regimes, local authorities to develop local actions related, *inter alia*, to traffic management and municipal solid waste, industry to deploy technologies to eliminate industrial pollutants, and the agriculture sector, including both industrial agriculture and small-scale farmers to transition to more sustainable management of crop residue. Low and middle-income countries will need support to ensure that their economic growth is not accompanied by increased levels of pollution. Support for the use of innovative applications, such as machine learning, data science techniques, and smart city technologies should be considered as a priority focus for capacity-building activities.

18. ***Commitment to long-term multi-lateral cooperation***. Existing multilateral cooperation mechanisms in subregions have contributed to comprehensive data exchanges, national and regional policy developments, scientific cooperation and knowledge sharing in the field of transboundary air pollution, yet the overall region has not seen reductions in pollution levels. These mechanisms can inform more effective cooperation. Regional cooperation has been demonstrated to produce reductions in emission levels over a long duration of time. For example, Europe's Convention on Long-range Transboundary Air Pollution, which entered into force in 1983, and includes signatories from the ESCAP region, has reported reduced emissions by 40-80 per cent since 1990.[12] The convention's science-policy protocols on various pollutants inform and guide member States to adopt policies and monitor emission levels of transboundary pollution to address the many factors contributing to air quality and provide lessons for future regional cooperation in Asia and the Pacific.

19. The elements of regional cooperation identified by member States provide the basis for further deliberations on effective initiative/modality to combat air pollution in Asia Pacific.

IV. Issues for consideration

20. In view of the challenges and opportunities outlined above, participants may wish to

(a) provide further guidance on a regional modality on air pollution for consideration at the seventh session of the Committee on Environment and Development at Ministerial level.

(b) share experiences on air quality policies at the national level and on regional and/or subregional efforts to reduce transboundary air pollution, particularly around experiences related to implementing programmes for monitoring, evaluation and policy action on the long-range transmission of air pollutants.

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[12] https://unece.org/convention-and-its-achievements