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Clean Air for All by 2030?

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IASS
POTSDAM



Air pollution is the world's most serious environmental health risk and a major cause of poor health and premature death. Affected populations have increased risks of strokes, heart disease, lung cancer, asthma, and other health problems. Unless urgent policy action is taken, the challenges presented by air pollution will increase rather than diminish in the future.

A global agreement regulating transboundary air pollution does not currently exist, and the recently adopted United Nations 2030 Agenda for Sustainable Development¹ lacks a stand-alone goal on air quality. Nevertheless, the 2030 Agenda establishes clean air as an integral element of the principle of sustainable development and sets out a much-needed complementary pathway for tackling atmospheric pollution at the global scale.

This Policy Brief is informed by previous work undertaken by IASS researchers that assesses the 2030 Agenda and existing international regulatory instruments addressing air pollution,² together with insights gained from participants in the development and negotiation of the 2030 Agenda. To improve air quality globally, the IASS recommends the following steps be taken:

■ **Message 1:**
Develop an international “law of the atmosphere”.

States should contribute to the International Law Commission's (ILC) programme on the protection of the atmosphere and promote the development of a comprehensive regulatory framework to protect air quality globally in appropriate international fora.

■ **Message 2:**
Adopt an integrated approach to implementing the Paris Agreement.

To strengthen efforts to keep global warming below 2 °C, the Paris Agreement should be implemented in consideration of the available synergies between climate change and air pollution mitigation measures.

■ **Message 3:**
Enhance transparency on air pollution.

This could be achieved through greater promotion of air quality monitoring, with a view to closing data gaps. Existing data should be made available to the public to raise awareness of the issue and to allow for more informed policy- and law-making.

¹ United Nations General Assembly (2015). Transforming Our World: The 2030 Agenda for Sustainable Development (A/RES/70/1, 25 September 2015). Available at: <https://sustainabledevelopment.un.org/post2015/transformingourworld> (accessed 25.01.2017).

² Lode, B., Schönberger, P., Toussaint, P. (2016). Clean Air for All by 2030? Air Quality in the 2030 Agenda and in International Law. – *RECIEL*, 25(1), pp. 2–38.

Air pollution: A risk for human health and the climate

Air pollution poses significant risks to both human health and the climate. The World Health Organization (WHO) estimates that poor air quality is the cause of around seven million premature deaths worldwide each year. Its burden of disease by now possibly exceeds the burdens of malaria, tuberculosis, and AIDS combined.

Hazardous air pollution episodes are commonplace occurrences in many low- and middle-income countries. In November 2015, for example, the Embassy of the United States in Beijing, China, reported that the level of fine particulate matter harmful to human health had exceeded 400 micrograms per cubic metre – more than seventeen times the level considered safe by WHO.³

Exposures are less severe in Europe, where emissions of certain air pollutants have been reduced significantly since the 1970s.⁴ Nonetheless, air pollution remains an important issue in Europe, with concentrations of air pollutants exceeding levels recommended for the protection of human health and with a significant proportion of the population living in urban areas where exceedances commonly occur.

A number of air pollutants also have a warming effect on near-term climate. Among these so-called short-lived climate-forcing pollutants (SLCPs) are black carbon (also known as soot), methane, and ground-level ozone. Methane, for example, is a greenhouse gas with an atmospheric lifetime of only around 12 years – yet, it is over twenty times more potent than carbon dioxide.⁵ Methane impacts the climate system directly but also has indirect effects on human health and ecosystems, in particular through its role as a precursor of ground-level ozone. Black carbon, on the other hand, is a major component of fine particulate matter. Its warming impact on the climate is 460 to 1 500 times stronger per ton than that of carbon dioxide and it can increase the melting rate of snow and ice if deposited there.

The relatively short atmospheric lifespan of these substances – ranging from a few days to a few decades – means that concentrations can be reduced in a matter of weeks to years after emissions are cut, with a noticeable effect on global temperatures within the following decades. Reducing emissions of short-lived climate-forcing pollutants and carbon dioxide are complementary goals that promise to benefit human health and the global climate.

³ World Health Organization (2006). *Air Quality Guidelines for Particulate Matter, Ozone, Nitrogen Dioxide and Sulfur Dioxide: Global Update 2005: Summary of Risk Assessment*. Available at: http://www.who.int/phe/health_topics/outdoorair/outdoorair_aqg/en/ (accessed 25.01.2017).

⁴ European Environment Agency (2015). *The European Environment – State and Outlook 2015: Synthesis Report*. Available at: <http://www.eea.europa.eu/soer> (accessed 25.01.2017).

⁵ IPCC (2014). *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Available at: http://ar5-syr.ipcc.ch/topic_summary.php (accessed 25.01.2017).

UN resolutions and the 2030 Agenda call for prompt action

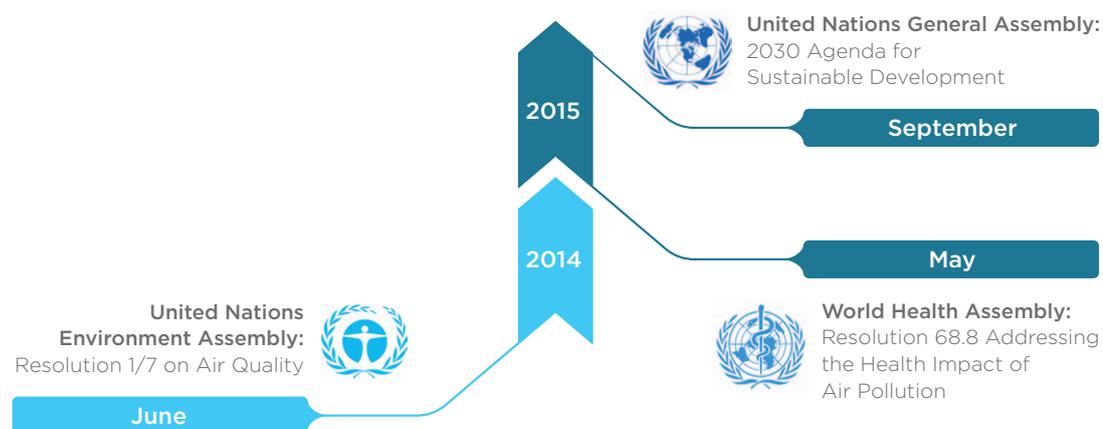


Figure 1: Recognition of air pollution as a global issue by key intergovernmental bodies

Source: IASS

Key bodies of the United Nations have in recent years recognised the urgent need to address the challenges posed by transboundary air pollution to humankind, its future, and the environment (see Figure 1).

In June 2014, the new governing body of the United Nations Environment Programme (UNEP), the United Nations Environment Assembly (UNEA), adopted a resolution on air quality at its first session, noting that “poor air quality is a growing challenge in the context of sustainable development, in particular related to health in cities and urban areas”, and calling for cross-sectoral efforts to improve air quality.⁶

In May 2015, the World Health Assembly, the decision-making body of the World Health Organization

(WHO), adopted a resolution addressing the health impact of air pollution, “[r]oting with deep concern that indoor and outdoor air pollution are both among the leading avoidable causes of disease and death globally, and the world’s largest single environmental health risk”⁷

In view of the resolution’s explicit assertion that “air pollution reduction is an integral element of global sustainable development”, it is hardly surprising that the 2030 Agenda for Sustainable Development, adopted by the United Nations General Assembly in late 2015,⁸ contains several targets and indicators addressing air quality. While at least seven of the Agenda’s goals are relevant to this issue (see Figure 3),⁹ two make explicit reference to air quality

⁶ UNEA Resolution 1/7 (UNEP/EA.1/10, Annex I, 2 September 2014).

⁷ World Health Organization (2015). *Health and the Environment: Addressing the Health Impact of Air Pollution* (Resolution WHA68.8, 26 May 2015). Available at: http://apps.who.int/gb/or/e/e_wha68r1.html (accessed 25.01.2017).

⁸ United Nations General Assembly (2015). *Transforming Our World: The 2030 Agenda for Sustainable Development* (A/RES/70/1, 25 September 2015). Available at: <https://sustainabledevelopment.un.org/post2015/transformingourworld> (accessed 25.01.2017).

in their targets and indicators. These are Goal 3 on health and Goal 11 on sustainable cities (see Figure 2).

Multi-stakeholder partnerships such as the Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants (CCAC)⁹ also play an important role in the fight against global air pollution. The CCAC, with which the IASS has worked closely for several years, is a voluntary global partnership that brings together over 100 State and non-State partners to catalyse action to reduce emissions of short-lived climate-forcing pollutants through cost-effective, targeted measures. If fully implemented by 2030, these measures could reduce global methane emissions by

40% and global black carbon emissions by 80% by 2050.¹¹ These reductions have the potential to prevent around 2.4 million premature deaths from outdoor air pollution per year and could slow global warming by 0.5 °C by 2050.¹²

Finally, air quality again featured prominently on the agenda at UNEA's second session in May 2016. In response to UNEA Resolution 1/7, UNEP's Executive Director presented a global summary report of actions on air quality adopted by countries around the world and launched a public database of air quality policies and regulations by country and by region.¹³

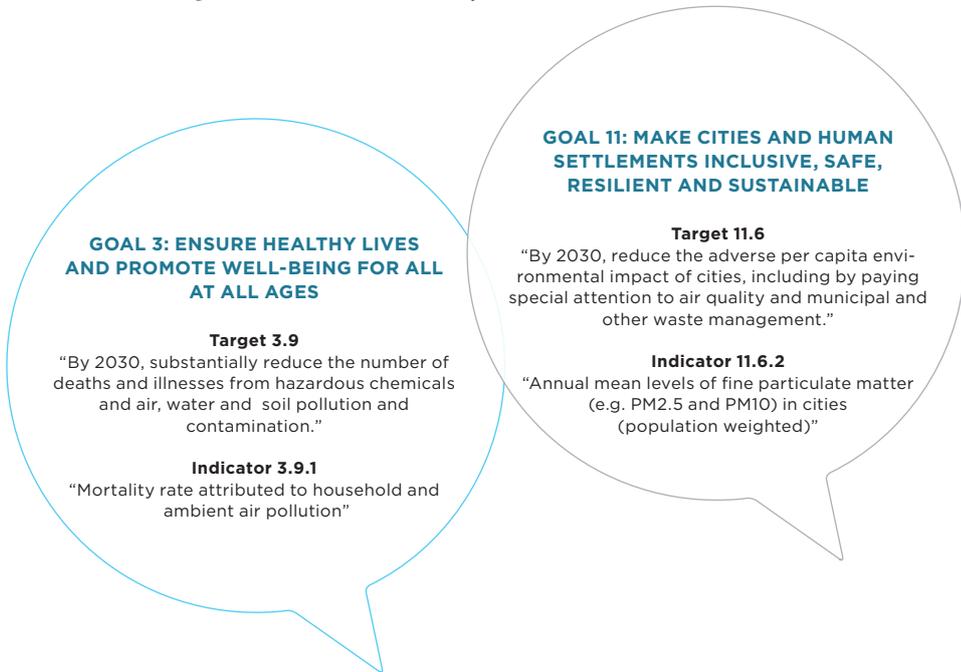


Figure 2: Overview of SDG targets and indicators directly related to air quality

Source: IASS

⁹ Goal 2 (food security); Goal 3 (health); Goal 7 (sustainable energy); Goal 9 (resilient infrastructure, industrialization and innovation); Goal 11 (sustainable cities); Goal 12 (sustainable consumption and production); Goal 13 (climate action).

¹⁰ <http://www.ccacoalition.org/> (accessed 25.01.2017).

¹¹ UNEP and WMO (2011). *Integrated Assessment of Black Carbon and Tropospheric Ozone*. (p. 178) Available at: www.unep.org/dewa/Portals/67/pdf/BlackCarbon_report.pdf (accessed 25.01.2017).

¹² Ibid.

¹³ UNEP (2016). *Actions on Air Quality*. Available at: <http://www.unep.org/transport/airquality/>. (accessed 25.01.2017).

**GOAL 2: END HUNGER,
ACHIEVE FOOD SECURITY AND
IMPROVED NUTRITION AND
PROMOTE SUSTAINABLE
AGRICULTURE**

The reduction of agricultural emissions of certain short-lived climate-forcing pollutants will yield benefits for air quality and avoid crop losses.

**GOAL 3: ENSURE HEALTHY
LIVES AND PROMOTE
WELL-BEING FOR ALL AT
ALL AGES**

The reduction of indoor and outdoor air pollution will significantly mitigate health risks and reduce premature deaths resulting from poor air quality.

**GOAL 7: ENSURE ACCESS
TO AFFORDABLE, RELIABLE,
SUSTAINABLE AND
MODERN ENERGY FOR ALL**

Increased energy efficiency, access to clean fuels, and renewable energy will yield co-benefits for air quality by reducing air pollution originating from combustion.

**GOAL 11: MAKE CITIES AND
HUMAN SETTLEMENTS
INCLUSIVE, SAFE, RESILIENT
AND SUSTAINABLE**

Reducing the concentration of particulate matter in cities will help reduce health risks and premature deaths from outdoor air pollution.

**GOAL 13: TAKE URGENT
ACTION TO COMBAT CLIMATE
CHANGE AND ITS IMPACTS**

Measures to counteract climate change at all levels may yield co-benefits for air quality, in particular where they concern short-lived climate-forcing pollutants.

**GOAL 12: ENSURE
SUSTAINABLE CONSUMPTION
AND PRODUCTION PATTERNS**

The greening of supply chains, in particular through low emission technologies, offers benefits for air quality and climate.

**GOAL 9: BUILD RESILIENT
INFRASTRUCTURE, PROMOTE
INCLUSIVE AND SUSTAINABLE
INDUSTRIALIZATION
AND FOSTER INNOVATION**

Reductions of air pollutants co-emitted with carbon emissions from industrial production will yield benefits for air quality.

Figure 3: Sustainable Development Goals (SDGs) of relevance for air quality

Source: IASS



Air quality in the 2030 Agenda for Sustainable Development

Develop an international “law of the atmosphere”

While climate change, biodiversity and ocean governance are all subject to global framework agreements, a comparable treaty on air quality is yet to emerge. Instead, international law as it relates to the protection of the air is fragmented across a plethora of instruments, several of which apply to the same pollutants. These instruments differ with respect to their geographic scope, membership, and the pollutants they seek to regulate. Moreover, these instruments are often governed by different bodies and not all of them are legally binding. The development of a comprehensive multilateral regulatory framework for the protection of the atmosphere would significantly increase coherence and both avoid and resolve duplication.

The Convention on Long-Range Transboundary Air Pollution (CLRTAP)¹⁴ is perhaps the most important existing international agreement on air pollution. In the field of air pollution abatement, the Convention comes closest to what can be described as a “framework instrument” comparable to the United Nations Framework Convention on Climate Change (UNFCCC) or the UN Convention on Biological Diversity (CBD). Much like these instruments, CLRTAP does not set concrete reduction commitments; rather it establishes a procedural framework for cooperation that has been fleshed out by subsequent protocols.

The last protocol to have been adopted under the Convention, the 1999 Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone includes further mechanisms to reduce atmospheric emissions of sulfur dioxide, nitrous oxides, volatile organic compounds (VOCs), and ammonia. In 2012, the Protocol was amended to include emission reduction commitments for particulate matter (PM). Although parts of this amendment are yet to enter into force, the amended protocol marks an important step in regulating global air pollution as the first legally binding international treaty to address particulate matter, including black carbon.¹⁵

The cooperation of States under the CLRTAP regime has been largely successful. Significant reductions of acidification, lead pollution, and persistent organic pollutants (POPs) have been achieved, providing a best practice model for other international efforts in the field of air pollution abatement. However, the geographic scope of the CLRTAP regime is currently limited to 51 State parties from the Northern Hemisphere (see Figure 4) and does not extend to any of the emerging economies where air pollution has become a major problem.

¹⁴ Convention on Long-Range Transboundary Air Pollution (Geneva, 13 November 1979; entered into force 16 March 1983).

¹⁵ Limit values for PM have already been established in the European Union through Directive 2008/50/EC of 21 May 2008 on Ambient Air Quality and Cleaner Air for Europe, [2008] OJ L152/1. Furthermore, while the EU is yet to ratify the amendments to the Gothenburg Protocol, it already reports on emissions of PM in its inventory reports under CLRTAP.

Signatories to the Convention on Long-Range Transboundary Air Pollution

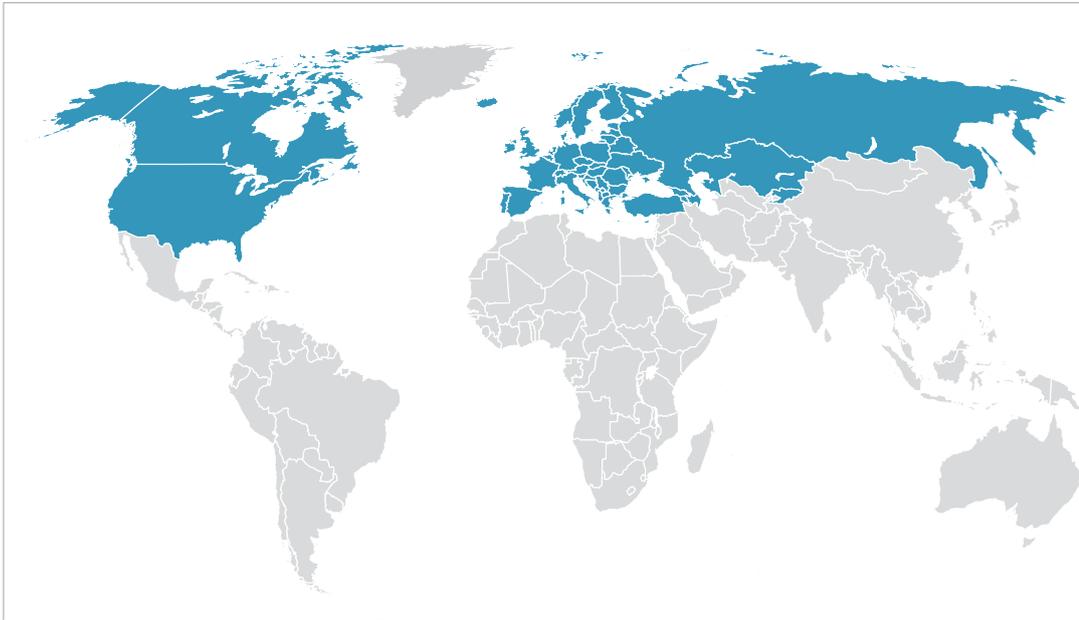


Figure 4: The geographic scope of the Convention on Long-Range Transboundary Air Pollution is currently limited to 51 countries.

Source: IASS

The Agreement on Transboundary Haze Pollution signed by the Member States of the Association of Southeast Asian Nations (ASEAN) in 2002 is another example of a treaty with regionally limited coverage. The Haze Agreement addresses the issue of forest fires in South East Asia, which have become a major source of transboundary air pollution in the region. It aims to prevent and monitor haze from forest fires by obliging Member States to cooperate, exchange information, facilitate research, and monitor and prevent such fires at national level.

In addition to its limited geographic scope, the Haze Agreement suffers from several other shortcomings: The language of its provisions is rather weak, and it does not provide a compliance mechanism to ensure effective implementation at national level. Moreover, Indonesia, where the vast majority of forest fires occur, did not ratify the treaty until eleven years after its entry into force; even then, it failed in autumn 2015 to prevent one of the region's most serious fire-related haze episodes.

In the European Union, air pollution has increasingly been subjected to Community legislation. The EU's Air Policy Framework includes several directives that set out uniform rules with regard to national emission reduction commitments¹⁶ and air quality standards,¹⁷ as well as source-specific legislation addressing air pollution from wheeled vehicles¹⁸ and industrial emissions.¹⁹ Directives are legally binding on Member States, requiring governments to change national laws or adopt new laws to meet their provisions. The air quality standards prescribed by these directives are more stringent than those adopted under the Gothenburg Protocol and their implementation thus contributes towards satisfying the requirements of the CLRTAP regime.

Other instruments reflecting a regional approach to air pollution include those adopted under the auspices of the United Nations Environment Programme (UNEP) in South Asia,²⁰ East Africa,²¹ South Africa,²² and West and Central Africa.²³ How-

ever, all of these are non-binding, mere political declarations and policy frameworks with a soft law character; none of these instruments have resulted in a legally binding treaty to date. Other multilateral agreements of relevance to air pollution include the Minamata Convention on Mercury – which has not yet entered into force – and the Stockholm Convention on Persistent Organic Pollutants, both of which focus on a specific type of pollutant. In addition to this, a number of multilateral treaties exist that focus on air pollution from specific sources in the transport sector, namely, from ships,²⁴ aircraft,²⁵ and motor vehicles.²⁶

The Paris Agreement will also be relevant to efforts to regulate air quality at the international level, as will be outlined in the following chapter. While this list of international and regional instruments is by no means exhaustive, those included here make up the bulk of what could be described as international law as it relates to the protection of the atmosphere.

¹⁶ Directive 2016/2284/EU of 14 December 2016 on the reduction of national emissions of certain atmospheric pollutants, amending Directive 2003/35/EC and repealing Directive 2001/81/EC, [2016] OJ L344/1.

¹⁷ Directive 2008/50/EC of 21 May 2008 on ambient air quality and cleaner air for Europe, [2008] OJ L152/1.

¹⁸ Directive 2007/46/EC of 5 September 2007 establishing a framework for the approval of motor vehicles, [2007] OJ L263/1.

¹⁹ Directive 2010/75/EU of 24 November 2010 on industrial emissions, [2010] OJ L334/17.

²⁰ Malé Declaration on Control and Prevention of Air Pollution and its likely Transboundary Effects for South Asia (20 March 1998).

²¹ Nairobi Agreement (2008) – Eastern Africa Regional Framework Agreement on Air Pollution (Nairobi, 23 October 2008).

²² Lusaka Agreement (2008) – Southern African Development Community (SADC) Regional Policy Framework on Air Pollution (Lusaka, 7 March 2008).

²³ Abidjan Agreement (2009) – West and Central Africa Regional Framework Agreement on Air Pollution (Abidjan, 22 July 2009).

²⁴ Protocol 1997 (Annex VI – Regulation for the Prevention of Air Pollution from Ships; in force 19 May 2005), International Convention for the Prevention of Pollution from Ships (London, 1973, as amended by Protocol 1978 relating thereto; in force 2 October 1983).

²⁵ Convention on International Civil Aviation (Chicago, 7 December 1944; in force 4 April 1947), International Standards and Recommended Practices, Annex 16 on Environmental Protection.

²⁶ Agreement Concerning the Establishment of Global Technical Regulations for Wheeled Vehicles, Equipment and Parts which Can Be Fitted and/or Used on Wheeled Vehicles (Geneva, 25 June 1998; in force 25 August 2000).

As is evident, there is no unified body of law, rather the instruments are fragmented. Attempts to create such a body of law or regulatory framework are being undertaken by the International Law Commission (ILC), which aims to draft a set of guidelines by 2020. It is important that Germany and the interna-

tional community of States support the ILC's work on the topic of the "protection of the atmosphere" and advocate for the adoption of a comprehensive legal framework regulating global air pollution in the long-term.

The ILC's work on the atmosphere

Efforts to harmonise the multitude of existing instruments into a comprehensive legal regime have been formalised by the International Law Commission (ILC), which has included the "protection of the atmosphere" in its programme of work since 2013. The Commission has appointed a Special Rapporteur to develop by 2020 a set of draft guidelines identifying cross-cutting legal rules and principles applying to the protection of the atmosphere.

As a result of a "political understanding", the ILC's mandate was drastically restricted to avoid potential conflicts with ongoing climate negotiations. As such, its work on atmospheric law excludes various issues, among them the liability of States, the polluter-pays principle, the precautionary principle, the principle of common but differentiated responsibilities, and specific substances such as black carbon.

While this limitation has drawn extensive criticism from academic experts and even members of the ILC, it is anticipated that the project will at least characterise "the broad contours of an international law of atmospheric resources".²⁷

²⁷ See Sand, P., Wiener, J. (2015). Towards a New International Law of the Atmosphere? – Goettingen Journal of International Law, Vol. 7, No. 2, at 24.

Adopt an integrated approach to implementing the Paris Agreement

In order to strengthen the worldwide effort to keep global warming below 2 °C, the Paris Agreement should be implemented in consideration of the available synergies between climate change and air pollution mitigation measures. Adopted in December 2015, the Paris Agreement and the corresponding decision of the Conference of the Parties (COP21 Decision) provide an important platform for catalysing global action to protect the climate and promote air quality.

Both the temperature goals of 2 °C and 1.5 °C set out in Article 2 of the Paris Agreement and the call in Article 4 for Parties to peak their greenhouse gas emissions as soon as possible underline the urgency of stepping up global efforts to reduce emissions of primary greenhouse gases such as carbon dioxide and methane. But the Paris Agreement goes one step further by asking Parties to achieve a “balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century” (Article 4).

It is becoming increasingly clear that international climate mitigation efforts may not suffice to achieve the long-term temperature and mitigation goals set out in the Paris Agreement if they are focused on

reducing carbon dioxide alone. Mitigation needs to include measures aimed at reducing emissions from short-lived climate-forcing pollutants such as methane, black carbon, and ground-level ozone. Not only could such measures, once fully implemented, help to reduce global warming by around 0.5 °C by 2050, they also offer significant benefits in the form of improved air quality. Several countries have already started integrating reductions of short-lived climate-forcing pollutants as strategies alongside the mitigation of long-lived greenhouse gases in their nationally determined contributions (NDCs) under the Paris Agreement.

The adoption of an integrated approach to tackling anthropogenic emissions of carbon dioxide as well as short-lived climate-forcing pollutants in the implementation of the Paris Agreement could yield considerable synergistic benefits. For example, retrofitting brick kilns with more efficient and environmentally friendly technologies can result in reductions of pollutant emissions of up to fifty per cent.²⁸ Policymakers should move to reap the considerable benefits for health, development, and climate that can be achieved by reducing emissions of short-lived climate-forcing pollutants.

²⁸ For IASS work in this respect, see, e.g., <http://www.iass-potsdam.de/en/research/sustainable-interactions-atmosphere-siwa/news/rebuilding-nepal-iass-supports-cleaner-brick> (accessed 25.01.2017) and <http://www.iass-potsdam.de/en/research/sustainable-interactions-atmosphere-siwa/news/mitigating-air-pollution-iass-new-lead> (accessed 25.01.2017).

Enhance transparency on air pollution

Improving transparency will be crucial to efforts to reduce air pollution globally. Environmental transparency measures enable people to build pressure on governments to improve air quality monitoring, to push for better laws and policies on air quality and to ensure their proper enforcement. Efforts to enhance transparency should accordingly seek to improve the availability of, and access to, data and information as well as raising public awareness.

Air quality monitoring systems can provide reliable data, but coverage for different air pollutants varies across the globe. The *Tropospheric Ozone Assessment Report*²⁹ reveals that whereas ample data is available on ground-level ozone in the United States and Europe, this is not the case in many Asian and South American countries, and virtually no data is available for countries in Africa, reflecting the scarcity of monitoring stations in these regions. Many developing countries do not have or do not allocate financial resources to acquire the necessary technology and often lack the human resources required for its operation. Targeting these countries, the international community should make full use of available financing mechanisms to promote the procurement of monitoring technology. In parallel, developed countries should strengthen technology transfer and capacity building for air quality monitoring in these countries.

Where air pollution data is available, it should be accessible to the public. In many countries, government agencies are not required to make data from air quality monitoring stations publicly available. In the

USA and the UK, otherwise inaccessible data can be obtained through Freedom of Information requests. In the EU, Member States are obligated to respect citizens' right of access to environmental information, and public authorities are required to actively disseminate environmental information in their possession.³⁰ In China, citizens can access up-to-date information on pollution levels using one of the many available smartphone apps. In many other countries air pollution data may be publicly available but can be so obscure or spread across different sources that even experts struggle to make sense of it.

Policy dialogues between government representatives, health organisations, research institutes, and non-governmental organisations (NGOs) can contribute to efforts to enhance transparency by sharing knowledge and best practices on communicating air quality data to the public and by raising public awareness.

Raising public awareness is vital to build pressure on governments to adopt more progressive laws and policies to protect clean air. However, public awareness varies greatly from country to country, depending on the visibility of the problems and the availability and ease of access to data. Raising awareness of air pollution and its adverse impacts on health and climate empowers citizens to lobby governments for more stringent air quality standards. Key mechanisms for raising public awareness include policy dialogues, campaign work by NGOs and civil society actors, and targeted outreach initiatives.³¹

²⁹ <http://www.igacproject.org/TOAR> (accessed 25.01.2017).

³⁰ <http://ec.europa.eu/environment/aarhus/> (accessed 25.01.2017).

³¹ See, e.g., <http://www.iass-potsdam.de/en/research/sustainable-interactions-atmosphere-siwa/news/less-soot-more-climate-protection-and-air> (accessed 25.01.2017).

Achieving clean air for all through the 2030 Agenda

In the absence of a comprehensive multilateral regulatory framework for the protection of the atmosphere, the 2030 Agenda for Sustainable Development presents an important opportunity to protect air quality globally.

The Sustainable Development Goals (SDGs) of the 2030 Agenda complement existing regional and international regulatory instruments on air quality. The inclusion of express targets on air pollution under two SDGs, coupled with the benefits for air quality achievable under a further five goals, puts air quality on the global agenda as a cross-cutting issue. The strong political momentum driving the implementation of the 2030 Agenda harbours significant potential to accelerate the development of a global framework treaty for the protection of the atmosphere.

Attempts to implement air pollution targets in the context of the 2030 Agenda will benefit from the structures in place under existing regulatory instruments. In comparison to many existing regional and international regulatory instruments on air quality, the SDGs build strongly on voluntary commitments. The 2030 Agenda is a non-binding resolution of the UN General Assembly and States are under no legal obligation to implement – let alone achieve – its goals. Nonetheless, the legal obligations of States under existing regulatory instruments continue to apply, and efforts to comply with these obligations will contribute towards achieving the SDGs.

What the 2030 Agenda lacks in terms of compliance, it makes up by enabling implementation. Issues related to its implementation, such as funding, follow-up and review processes, were negotiated alongside the substantive content of the agenda. As a result, the means of implementation are included under individual SDGs and have found expression in their own SDG (Goal 17).

The 2030 Agenda for Sustainable Development and its seventeen Sustainable Development Goals represent a landmark in global development policy in terms of their geographic scope and ambition to place people and the planet on a sustainable pathway by 2030. Within this context, with the relevant institutions and processes in place, and with increasing public awareness of both the urgent need to tackle poor air quality and the benefits of reductions of short-lived climate-forcing pollutants, global efforts to create a comprehensive multilateral “law of the atmosphere” may come to fruition in due time. ■

Find out more ...

To learn more about improving air quality globally, see the following publications and articles:

- Lode, Schönberger, Toussaint (2016): **Clean Air for All by 2030? Air Quality in the 2030 Agenda and in International Law.** In: Review of European, Comparative & International Environmental Law, 25, 1, pp. 27–38.
- Mar, Panday, Rupakheti (2015): **A Clear View for Kathmandu – Improving Air Quality in the Kathmandu Valley.** IASS Brochure, February 2015.
- Schmale, Shindell, v. Schneidemesser, Chabay, Lawrence (2014): **Air pollution: Clean up our skies.** In: Nature, 515, 7527, pp. 335–337.
- Lode (2014): **Increasing Integration in Global Climate Governance – The Climate and Clean Air Coalition.** IASS Working Paper, July 2014.
- Lode (2014): **Linking the Challenges of Climate Change and Air Pollution – Promising Legal and Policy Efforts with Effects on the Changing Nature of International Environmental Law.** In: Sancin, V., Kovic Dine, M. (eds.), International Environmental Law: Contemporary Concerns and Challenges in 2014, Ljubljana: GV Publ., pp. 327–339.



Institute for Advanced Sustainability Studies (IASS) e. V.

Funded by the ministries of research of the Federal Republic of Germany and the State of Brandenburg, the Institute for Advanced Sustainability Studies (IASS) aims to identify and promote development pathways for a global transformation towards a sustainable society. The IASS employs a transdisciplinary approach that encourages dialogue to understand sustainability issues and generate potential solutions in cooperation with partners from the sciences, politics, the economy, and civil society. A strong network of national and international partners supports the work of the institute. Its central research topics include the energy transition, emerging technologies, climate change, air quality, systemic risks, governance and participation, and cultures of transformation.

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