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Air Pollution, Health, and Human Rights

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The activities of humans ubiquitously contaminate the air with toxic pollutants. Air pollution has both short-term and long-term adverse effects, and contributes to the causation of noncommunicable diseases. ¹As noted by the Forum of International Respiratory Societies, "Breathing unhealthy air is a cause or contributor to most respiratory conditions," At the global scale, greenhouse gas pollution has led to climate change with serious direct and indirect consequences for human and environmental health.

Looking globally, the problem of air pollution is heterogeneous in its sources, and in the populations affected, but consistent in the urgent need for action. We address whether framing air pollution as a human rights issue would both motivate and direct actions more quickly and efficiently than what exists at present. Air pollution has long been an acknowledged public health threat and viewed as an inevitable consequence of energy use and industrial production. Its consequences and costs are merely an externality for polluters, whether individuals or corporations. However, drawing on Hardin's analogy of the "tragedy of the commons", the collective actions of polluters have created a situation that threatens the health of all, and governments have human rights obligations which have been inadequately invoked to protect the public's health from air pollution. The legal basis for action can be derived from the right to health and related rights. The basic responsibility of governments to protect health underlies action, even as there is not an explicit right to a healthy environment or to "safe", "healthy", or "pollution-free" air per se.

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JMS and SG contributed equally to the conception, development, writing, editing, and final preparation of this manuscript. Declaration of interests

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The right to health is stated in international documents and expressed in the World Health Organization (WHO)'s constitution: "The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being." Can that right be understood to encompass a safe and healthy environment, including and in particular ensuring that air pollution does not bring harm? While a healthful environment seems fundamental to the right to health, no enforceable legal document guaranteesthis right. The first principle of the 1972 Stockholm Declaration, one of the earliest calls for a right to a healthy environment, begins: "Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations."

Since then, a specific right to a healthy environment has not gained much traction for complicated reasons, ranging from political to legal. Nonetheless, human rights advocates have successfully shown that, given the interdependence of rights, a range of rights can be invoked because their realization is *dependent* on a safe and healthy environment. Although the ability to enjoy all human rights may be affected might be affected by environmental degradation, including air pollution, the right to health provides an important entry point, particularly when coupled with rights to *life; adequate food, water,* and *housing; non-discrimination; participation*; and *self-determination*. Of particular importance, the Convention on the Rights of the Child, 6 notes the need "To combat disease and malnutrition, ...taking into consideration the dangers and risks of environmental pollution.," and provides comprehensive elaboration of governmental legal obligations in a related document.

Any call for human rights protections that cover air pollutionby claiming a right to a healthy environment will be challenged by scientific understanding of risks posed by air pollution, and by lawyers concerned with the limits of what human rights law can offer. We propose that taking the right to health as a start, as done by the Committee on the Rights of the Child, implies similar protections for adults, with the potential, in particular, for engagement and mitigation of the effects of pollution on vulnerable populations. However, even the comparatively low levels of air pollution in high-income countries can still be linked to adverse health effects. In 2013, the WHO International Agency for Research on Cancer classified air pollutionas causing cancer in humans. Understanding of underlying mechanisms indicates that any exposure conveys some cancer risk. Thus, a rights-based strategy can call for air quality to be as healthy as possible, but not risk-free, an unattainable goal. At best, the target risk would need to be based on principles used to guide risk management: as low as reasonably achievable (ALARA)⁹ and the precautionary principle, ¹⁰ protecting against the possibility of risk in the face of uncertainty.

Climate changeposes particular challenges when viewed with a rights lens. ¹¹Its health consequences are likely to be far more serious in vulnerable low- and middle-income countries that have contributed little to greenhouse gas emissions and that have less capacity to adapt; and today's emissions will affect the health of future generations everywhere. A *rights-based approach* to climate change offers a framework for problem-solving that is based in international human rights law, includes relevant methodologies to identify and address stakeholder interests, ensures the equity and participation of affected populations,

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and creates accountability mechanisms. It makes clear that the focus is on people and indicates roles for governments and other stakeholders, requiring the identification of "duty bearers" who have an obligation to "rights-holders" to correct wrongs and implement solutions. ¹¹

We conclude that rights-based approaches merit deeper consideration for advancing air pollution control globally at a time when air quality is notably deteriorating in many parts of the world. They provide a universal rationale and approach for action, even in the face of widely varying legal and regulatory schemes.

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