

PAHO's road map on air quality

A strategic agenda to mainstream health in air quality management

Context

In 2016 alone, according to the World Health Organization (WHO)¹, some 249 thousand premature deaths were attributable to outdoor air pollution and another 83 thousand premature deaths were attributable to the use of solid fuels for household energy (household air pollution) in the Americas. In addition, black carbon is increasingly recognized as an important short-lived climate pollutant and its consequent contribution to climate change, being its main sources the use of solid fuels and transport. Everyone can be exposed to air pollution. However, exposure may vary significantly among different population groups and geographic areas. People living near busy roads or industrial sites, for example, often are exposed to higher levels of outdoor air pollution than others, while those who live in households that rely on solid fuels for energy bear the brunt of exposure to household air pollution. In some instances, exposure differences among population groups may be linked with inequities in the development, implementation, and enforcement of environmental laws, regulations, and policies.

The severity of air pollutant and precursor emissions is largely determined by industrial activity, road transport, open-air waste burning, biogenic sources, dust, and indoor household sources. It follows that the response to adverse health effects attributable to air pollution depends on the implementation of policies and programs that reduce emissions from these sources effectively. The extent to which countries take health dimensions explicitly into account as they consider and implement national and sub-national policies and programs to reduce air pollution varies from country to country. Existing policies and programs were documented recently by the United Nations Environment (UNEP)². According to their report, 21 countries of the Americas have air quality standards but only 13 have laws, policies, or regulations to manage it. Furthermore, 20 countries have access to information on ground level outdoor air quality measurements in at least one city³ but only nine have quality assurance and quality control programs and some seven countries have established plans that identify specific actions to improve outdoor air quality at the national level or in at least one city. In most of the countries

¹ WHO (2018). Global Platform on Air Quality and Health. <http://www.who.int/airpollution/data/en/>

² UNEP (2014). Actions on air quality. Policies and programmes for improving air quality around the world. <https://www.unenvironment.org/resources/assessment-report/actions-air-quality-policies-and-programmes-improving-air-quality>

³ Riojas-Rodriguez H, Soares da Silva A, Texcalac-Sangador JL, Moreno-Banda GL (2016). Air pollution management and control in Latin America and the Caribbean: Implications for climate change. *Rev Panam Salud Publica* 40(3):150-158.

of the Region that do have plans, they are primarily coordinated and implemented by the environment sector with limited engagement on the part of the health sector.

Air pollution is gaining recognition in and prominence on global agendas. In September 2015, the UN General Assembly adopted the 2030 Agenda for Sustainable Development, which makes central references to air pollution in the following goals:

- Goal 3 (ensure healthy lives and promote well-being for all at all ages), within which target 3.9 is an aspiration to “substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination” that is being monitored, among others, by indicator 3.9.1 (mortality rate attributed to household and outdoor air pollution) under WHO custody;
- Goal 7 (ensure access to affordable, reliable, sustainable and modern energy for all), within which target 7.1 is an aspiration to “ensure universal access to affordable, reliable and modern energy” that is being monitored, among others, by indicator 7.1.2 (proportion of population with primary reliance on clean fuels and technology) under WHO custody; and
- Goal 11 (make cities and human settlements inclusive, safe, resilient and sustainable), within which target 11.6 is an aspiration to “reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management” that is being monitored, among others, by indicator 11.6.2 [annual mean levels of fine particulate matter (e.g. PM_{2.5} and PM₁₀) in cities (population weighted)] under WHO custody.

Specifically in health, in May 2015, the World Health Assembly (WHA) endorsed the report “addressing the health impact of air pollution”⁴ and in 2016, it endorsed the resolution on the “road map for an enhanced global response to adverse health effects of air pollution.”⁵ In the environment sector, the United Nations Environment Assembly (UNEA) adopted resolution 1/7 “strengthening the role of the United Nations Environment Programme (UNEP) in promoting air quality”⁶ in June 2014. In the same year, the XIX Meeting of the Forum of Ministers of

⁴ World Health Assembly, 68.(2015) Health and the environment : addressing the health impact of air pollution: draft resolution proposed by the delegations of Albania, Chile, Colombia, France, Germany, Monaco, Norway, Panama, Sweden, Switzerland, Ukraine, United States of America, Uruguay and Zambia. World Health Organization. <http://apps.who.int/iris/handle/10665/253206>

⁵ World Health Assembly, 69.(2016). Health and the environment: draft road map for an enhanced global response to the adverse health effects of air pollution: report by the Secretariat. World Health Organization. . <http://apps.who.int/iris/handle/10665/252673>

⁶ UNEA (2014). Strengthening the role of the United Nations Environment Programme in promoting air quality. https://wedocs.unep.org/bitstream/handle/20.500.11822/17135/UNEA1_Resolution7AirQuality.pdf

Environment for Latin America and the Caribbean adopted the Regional Plan of Action for Intergovernmental Cooperation on Air Pollution for Latin America and the Caribbean.⁷

In the region of the Americas, the Pan American Health Organization (PAHO) has been cooperating actively with Member States to address the health impact of air pollution. In particular, it has collaborated with several countries to strengthen legislation and regulatory efforts according to WHO air quality guidelines^{8,9}; built partnerships with UN Environment and the Climate and Clean Air Coalition (CCAC) in developing the BreatheLife Campaign aimed at mobilizing cities and people to reduce air pollution; tested the Household Energy Survey with WHO; joined the Global Alliance for Clean Cookstoves (GACC) to promote access to clean cooking technologies for all; supported countries with 10% or more of solid fuel users in their population to develop policies and programs to reduce household air pollution; and raised awareness through social media; and prepared training material on air pollution and health. Since the beginning of 2018, PAHO has been collaborating with WHO in the preparations for the Global Conference on Air Pollution and Health that will take place in Geneva from October 30 through November 1, 2018 to sensitize and mobilize high level public officials from the health and environment sectors.

By adopting the global UNEA resolution and Regional Plan of Action in 2014, the 2030 Agenda for Sustainable Development in 2015, and the WHA resolution in 2016, the countries of the Americas have shown their commitment to reducing the adverse health impact of air pollution. One of the key challenges to seeing this commitment through will be to enhance the engagement and capacity of health actors.

Mainstreaming health in air quality management

Air quality management refers to the entire set of actions a national or local regulatory authority undertakes to help protect human health and the environment from the harmful effects of air pollution. The process of managing air quality can be illustrated as a cycle of inter-related elements informed by scientific research. The cycle is a dynamic process (see figure below)¹⁰. Activities are assigned priority in accordance with air quality management plans that are prepared in joint consultation with all levels and relevant sectors of government, regulated industry

⁷ UNEP (2014). UNEP(2014) Regional Action Plan for Intergovernmental Cooperation on Air Pollution for Latin America and the Caribbean. <http://www.ccacoalition.org/en/resources/regional-action-plan-intergovernmental-cooperation-air-pollution-latin-america-and>

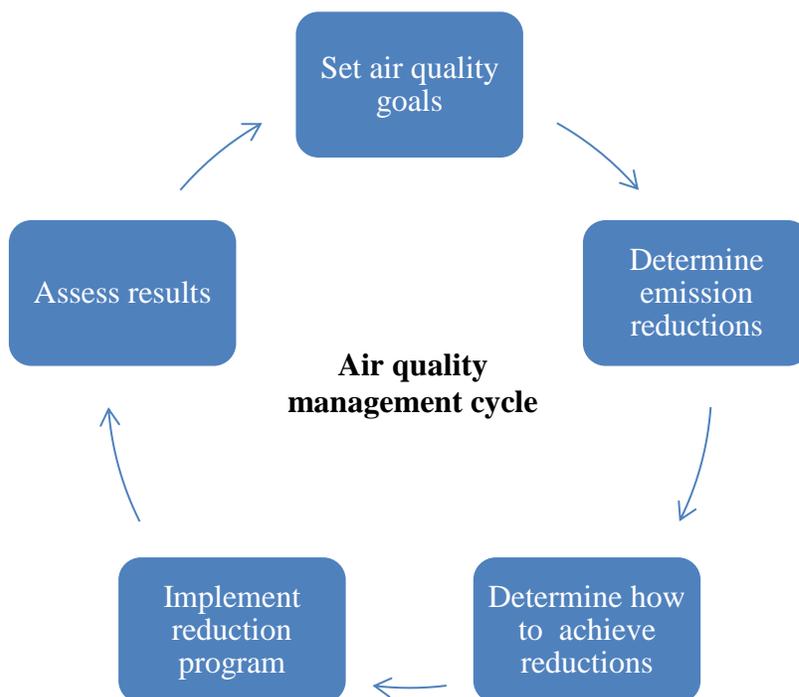
⁸ WHO (2005). Air quality guidelines-global update 2005. <http://www.who.int/airpollution/publications/aqg2005/en/>

⁹ WHO (2014) Indoor air quality guidelines: household fuel combustion.

<http://www.who.int/airpollution/guidelines/household-fuel-combustion/en/>

¹⁰ US EPA (2017). Air quality management process cycle. <https://www.epa.gov/air-quality-management-process/air-quality-management-process-cycle>

groups, scientists, environmental groups, and the general public. There is a regular review and assessment of goals and strategies based on the effectiveness of these plans.



The health actors should perform the following functions in this process:

- Establish **health goals** related to air quality by adopting the WHO air quality guidelines to set the maximum allowable level of an air pollutant concentration in order to protect the public health.
- Assess the **health risks of air pollution** to characterize the air quality problem, using emission inventories, air quality monitoring, air quality modeling, statistics on mortality and morbidity, cost of health care services, and other available information.
- Assess the **health impact of emission reduction strategies** to identify prospectively the strategies that would be more effective in health.
- Participate in the implementation of regulations and incentive programs to attain the air quality goals through **training**, cooperating on **communication strategies** with different stakeholders, and engaging in **health diplomacy** for the implementation of emission control strategies with positive impacts on health.
- Undertake on-going **assessments** to ascertain whether air quality goals are being met and to document good practices.
- Identify **research** priorities and promote investigations to support policy decision-making processes.

Program strategic agenda

In alignment with Goal 11 of the PAHO Sustainable Health Agenda for the Americas 2018-2030¹¹ and Outcome 3.5 of the Strategic Plan 2014-2019¹², the regional PAHO air quality program of the newly established Climate Change and Environmental Determinants of Health Unit of the Department of Communicable Diseases and Environmental Determinants of Health will build upon the successes and challenges of the former Special Program on Sustainable Development and Health Equity. Outcome 3.5 of the PAHO Strategic Plan (reduced environmental and occupational threats to health) includes two indicators that refer to air pollution: indicator 3.5.3 (number of countries and territories in which the proportion of the population that relies on solid fuels is reduced) and indicator 3.5.5 (number of countries and territories capable of addressing environmental health). The PAHO Program and Budget 2018-2019 contains two outputs that make direct reference to air pollution:

- *Output 3.5.2* (countries enabled to develop and implement norms, standards, and guidelines for environmental health risks and benefits associated with air quality and chemical safety) that is being monitored, among others, by indicator 3.5.2a (Number of countries and territories implementing WHO Resolution WHA68.8, Health and the environment: addressing the health impact of air pollution); and
- *Output 3.5.5* (countries enabled to develop and implement national policies, plans, or programs to reduce the use of solid fuels for cooking) that is being monitored by indicator 3.5.5 (number of countries with active policies, plans of action, and programs to replace traditional cook-stoves and heaters with cleaner technologies and fuels to reduce household emissions from the use of solid fuels in compliance with the WHO household air quality guidelines).

The new air quality program will continue putting into effect the WHO road map for an enhanced response to the adverse health effects of air pollution adopted in 2016. In particular, this plan sets out to further the engagement of health actors and strengthen their capacity to use public health evidence and arguments to contribute to and influence air pollution policy-making processes in order to improve air quality and health. The

¹¹ PAHO (2017). Sustainable Health Agenda for the Americas 2018-2030: a Call to Action for the Health and Well Being in the Region. http://www.paho.org/hq/index.php?option=com_content&view=article&id=13497&Itemid=2105&lang=en

¹² PAHO (2014). Strategic Plan of the Pan American Health Organization 2014-2019. Championing Health: Sustainable Development and Equity. <http://iris.paho.org/xmlui/bitstream/handle/123456789/7654/CD53-OD345-e.pdf?sequence=16&isAllowed=y>

program also will further the route proposed at the 2017 Regional BreatheLife Workshop in Medellin, Colombia¹³.

Four cross-cutting themes will be at the core of the program: gender, equity, human rights, and ethnicity. This will be ensured by promoting approaches that are people-centered, context specific, comprehensive, inter-sectorial, multi-disciplinary, and prevention-oriented, within a protection-empowerment framework. These approaches should emphasize the need to ensure and protect human rights through the furtherance of the rule of law and social protection instruments by governments, while at the same time, promote the development and strengthening of individual and community capabilities toward greater self-reliance and self-determination.

The regional air quality program will be a country-focused program, working permanently with the PAHO Country and Sub-regional Coordination Department, sub-regional offices, and country offices, with an aim to strengthen institutions and capacities and produce measurable results. For 2018-2019, Colombia, Cuba, Guatemala, Guyana, Honduras, Haiti, Panama, Paraguay, and Suriname prioritized *Output 3.5.2* and Colombia, Guatemala, Guyana, Mexico, Nicaragua, and Paraguay prioritized *Output 3.5.5* from the PAHO Program and Budget. The program also will seek collaboration from other areas within PAHO such as health promotion and social determinants of health to implement the Health in All Policies strategy, health emergencies to develop air quality alert plans, legal counsel to strengthen legislation, and health services and human resources for health to reinforce health care provider awareness. It will strive, as well, to maximize synergies and emphasize the many joint benefits of actions that address climate change, road safety, and non-communicable diseases. In particular, it will address short-lived climate pollutants such as black carbon, analyze the impact of urban planning on health, and highlight the links between air pollution and non-communicable diseases.

¹³ <http://breathelife2030.org/news/first-breathelife-workshop-meets-medellin-colombia/>

Functions of health actors in the air quality management process and criteria for the implementation of these functions



Program goal

Reduce the adverse health effects of outdoor and household air pollution in the region of the Americas.

Program objectives

Enhance the regional, national, and local response to the adverse health effects of outdoor and household air pollution in the Americas by mainstreaming health in air quality management.

The specific objectives are to:

1. Expand the regional knowledge base regarding the impacts of air pollution on health and the effectiveness of policies and interventions to address them.
2. Improve monitoring and reporting on health trends associated with human exposure to air pollution.
3. Leverage health sector leadership and coordinated action with relevant stakeholders at all levels in order to foster an appropriate response while ensuring synergies.
4. Enhance the capacity of sectors responsible for addressing the health effects of air pollution to analyze available evidence and influence decision-making processes.

Categories, results, and related actions

The PAHO air quality program is organized according to the four categories indicated in the road map for an enhanced response to the adverse health effects of air pollution adopted by WHO in 2016.

Category 1: Expanding the knowledge base

Result 1:

Expanded and readily accessible regional information and evidence on the health impacts of outdoor and household air pollution and on the effectiveness of policies and interventions to address them.

Related actions:

1. Develop and populate a repository of existing regional knowledge and evidence on the adverse health effects of air pollution and effective interventions to reduce it.
2. Prepare context-specific information materials on the adverse health effects of air pollution and effective interventions to reduce it.
3. Develop a toolbox to support research, analysis, and forecasting to assess the health impact of air pollution and its sources (e.g., health risk assessments, burden of disease, inequality assessments, transportation and health tool, health impact assessments, household energy use surveys, health care costs of air pollution, etc.).
4. Demonstrate the use of research, analytical, and forecasting tool applications in selected countries.

Category 2: Monitoring and reporting

Result 2:

Monitoring and reporting of trends associated with human exposure to outdoor and household air pollution are enhanced in the region, with emphasis on indicators included in the 2030 Agenda for Sustainable Development.

Related actions:

1. Populate the Global Platform on Air Quality and Health developed by WHO with regional air quality data obtained in the Americas.
2. Strengthen the capacity of countries to collect, validate, analyze, and report on air quality and its effects on health.
3. Estimate and report the burden of disease attributable to air pollution and assess social inequalities associated with exposure to air pollution. Specifically, monitor and report the advances of SDG targets 3.9, 7.1, and 11.6 through indicators 3.9.1, 7.1.2, and 11.6.2, respectively.

Category 3: Leadership and coordination

Result 3:

Health actors are engaged in coordinated action with relevant stakeholders to enable an appropriate response to reduce the adverse health effects of outdoor and household air pollution in the Americas while ensuring synergies.

Related actions:

1. Develop and launch a communication strategy under the umbrella of the BreatheLife Campaign to raise awareness of and stimulate demand for policies and programs that tackle air pollution and its adverse effects on health in the region.
2. Advocate for the reduction of adverse health effects of air pollution in high level regional and national fora, and through existing networks such as the healthy housing and healthy municipalities networks.
3. Renew and expand the western hemispheric alliance between ministries of health and environment first endorsed in the Mar del Plata Declaration of 2005.
4. Strengthen the regional network of collaborating institutions on air pollution and health including the Asociación Interamericana de Ingeniería Sanitaria y Ambiental (AIDIS), academic centers, and other non-governmental organizations.

Category 4: Institutional capacity strengthening

Result 4:

Capacity of sectors responsible for addressing adverse health effects of outdoor and household air pollution in the region of the Americas is strengthened.

Related actions:

1. Support the development of policies, plans and programs to reduce the adverse health effects of air pollution following the WHO air quality guidelines.
2. Develop a training program and related material on air pollution and health in the context of the Americas and disseminate it throughout the region.
3. Provide technical cooperation to selected countries.
4. Leverage support from global, regional, and national networks to enhance technical capacity, share experiences, and contribute to addressing the adverse health effects of air pollution.

Under the umbrella of the 2030 Agenda for Sustainable Development, the PAHO air quality program will focus on the adverse health effects of particulate matter. Based on the four categories of the road map, the

functions of health actors in the air quality management process, and the criteria for the implementation of these functions described above, the program will emphasize:

1. Legislation to improve air quality.
2. Better inclusion of the health dimension in air quality planning.
3. Advancement of health risk analyses associated with air pollution.
4. Promotion of clean household energy use.
5. Better integration of health in urban planning.
6. Reinforcement of healthcare provider awareness of the adverse health effects of air pollution.

These areas of work will be reinforced through the promotion of a governance system that is people-centered, context-specific, comprehensive, inter-sectorial, multidisciplinary, prevention-oriented, within a protection-empowerment framework. Such a governance system is expected to promote equity, participation, pluralism, transparency, accountability, and the rule of law, in a manner that is effective, efficient and enduring.

Description of PAHO air quality program

