

Current Health Event

Air quality

Air pollution is a major environmental health problem affecting everyone. Nine out of ten people now breathe polluted air. By reducing air pollution levels, countries can reduce the burden of disease from stroke, heart disease, lung cancer, and both chronic and acute respiratory diseases.

Editorial note:

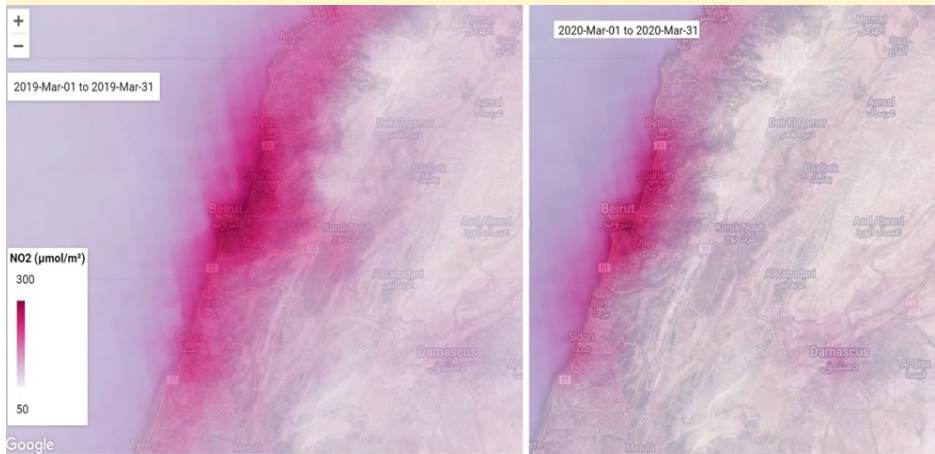
Air pollution poses a major threat to health and climate. The air pollutants that are of main concern for the health of the population are Particulate Matters, Ozone and Nitrogen Dioxide. In 2016, 92% of the world’s population was living in places where air quality levels exceed WHO recommended limits. The situation is even worse in the EMR where the percentage rises to 98%. Worldwide, ambient air pollution contributes to 7.6% of all deaths in 2016.

Updated estimations reveal an alarming death toll of 7 million people every year caused by ambient and household air pollution. In 2016, Ambient air pollution alone caused some 4.2 million deaths, while household air pollution from cooking with polluting fuels and technologies caused an estimated 3.8 million deaths. WHO recognizes that air pollution is a critical risk factor for non-communicable diseases, causing an estimated one-quarter (24%) of all adult deaths from heart disease, 25% from stroke, 43% from chronic obstructive pulmonary disease and 29% from lung cancer.

WHO develops tools for assessing the health impacts from various pollutants. The Health Impact assessment requires data on health and on ambient concentration of air pollutants, which can be based on Air quality monitoring; Air quality modelling; or remote sensing from satellites.

Air pollution is of major significance in Lebanon. Epidemiological studies have shown positive associations between the levels of exposure to air pollution and related health outcomes. More than 65% of the premature environmentally-caused deaths in Lebanon are attributable to air pollution (2,600 annual fatalities). According to a WHO study (2013), Lebanon is one of the countries in the Eastern Mediterranean being most affected by outdoor air pollution and that the health impact of air pollution might even be much larger

Figure 1: NO₂ concentrations in Lebanon retrieved by the European Copernicus Sentinel-5P satellite (March 2019 compared to March 2020).



than the estimations provided. The Ministry of Environment (MOE) established a national air quality monitoring network in Lebanon including 15 air quality monitoring stations distributing all over the country over two phases in 2013 and 2017 to collect data for five criteria pollutants (PM – SO₂ – NO_x – Ozone – CO). Unfortunately, the operation & maintenance of these stations stopped fully in April 2019 due to lack of funds. These stations need to be reactivated to undertake air quality monitoring and health risk assessment for air pollution in the country. MOE is working to combat air pollution through enforcing the law on air quality issued in 2018. As for the national ambient air quality standards, which are much higher for several pollutants than those of WHO guidelines, the MOE is currently looking for updating them based on WHO air quality guidelines.

After the lock down due to corona virus spread in Lebanon, captured satellite images showed a reduction in nitrogen dioxide concentrations over Lebanon by at least 30% during the month of March, compared to the same week in 2019. This is attributed mainly to the reduction in traffic by at least 80%. However, studies are needed to be conducted to measure the reduction in air pollutants concentrations in the country especially that diesel generators, hospital incinerators, and power plants are still normally operating.

WHO Member States recently adopted a resolution and a road map for responding to the adverse health effects of air pollution; emphasizing on:

- 1.expanding the knowledge base by building and disseminating global evidence and knowledge of the impacts of air pollution on health and the effectiveness of interventions and policies to address it.
- 2.enhancing systems to monitor and report on health trends and progress towards the air pollution related targets of SDGs;
3. enhancing the health sector’s capacity to address the adverse health effects from air pollution through training, guidelines and national action plans.

Notifiable Diseases in Lebanon [Cumulative n° of cases among all residents] as of 27 May 2020				
Disease	2019	2020	Mar 20	Apr 20
Vaccine Preventable Diseases				
Polio	0	0	0	0
AFP	87	23	4	0
Measles	1070	17	0	0
Mumps	124	12	0	0
Pertussis	78	44	7	2
Rabies	0	0	0	0
Rubella	26	0	0	0
Tetanus	0	0	0	0
Viral Hep. B	278	31	7	1
Water/Food Borne Diseases				
Brucellosis	224	35	9	9
Cholera	0	0	0	0
Hydatid cyst	30	5	1	0
Typhoid fever	257	41	9	2
Viral Hep. A	426	108	65	5
Other Diseases				
Meningitis	448	64	15	9
Viral Hep. C	78	23	4	1