



AIR QUALITY-LIFE INDEX (AQLI)

Spotlight: India

There are currently an estimated 4.5 billion people around the world exposed to particulate pollution levels that are at least twice what the World Health Organization (WHO) considers safe.

India is one of the most polluted countries in the world and air pollution is a major threat to health. But, the AQLI reveals that if India reduced its air pollution to comply with the WHO's air quality standard, its people could live about 4 years longer on average, or a combined more than 4.7 billion life years. If the country reduced pollution to comply with its national standards, its people could live more than 1 year longer on average, or a combined more than 1.6 billion life years.

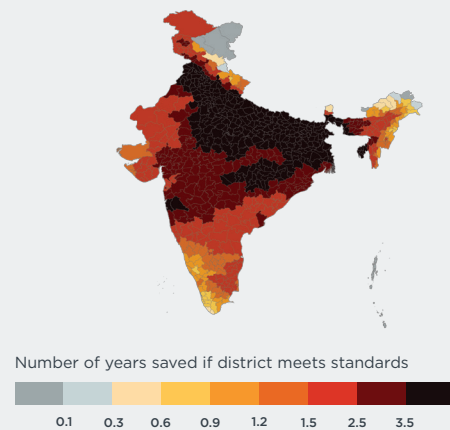
Some of the greatest gains would be seen in the country's largest cities, such as Delhi. There, people could live 6 years longer if the country met its national standards, and 9 years longer if the country met WHO standards. The people of Kolkata and Mumbai could live roughly 3.5 years longer if the country met WHO standards (See the top 50 regions that would see the greatest improvements on the backside).

India is already taking action to reduce pollution. EPIC-India is currently working with the central government and several state pollution control boards to implement India's first emissions trading program for particulate pollution. The program will be the world's first trading program specifically for particulate pollution.

"High levels of air pollution are a part of people's lives in India, just as they were in the U.S., England, Japan and other countries in the past. The last several decades have seen tremendous progress in many of these countries, but this progress did not happen by accident—it was the result of policy choices. As India navigates the dual and conflicting goals for economic growth and environmental quality, the AQLI provides a tool to make the benefits of policies to reduce air pollution concrete."

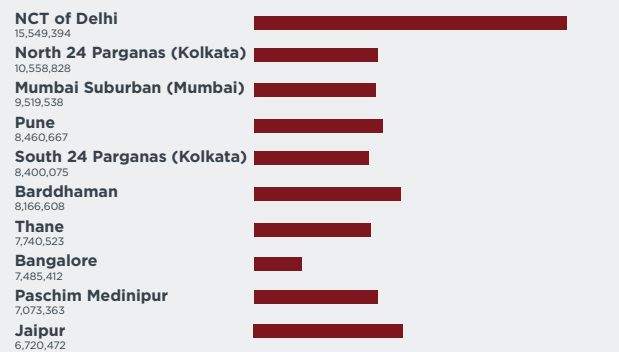
MICHAEL GREENSTONE
DIRECTOR, ENERGY POLICY INSTITUTE AT THE UNIVERSITY OF CHICAGO

Increase in Life Expectancy if India Met WHO Standard



Top 10 Most Populated Districts

■ Life Years Saved If District Meets WHO Standard



ABOUT THE AIR QUALITY-LIFE INDEX (AQLI)

The Air Quality-Life Index (AQLI) translates particulate pollution concentrations into the impact on lifespans. Specifically, it provides a reliable measure of the potential gain in life expectancy communities could see if their pollution concentrations are brought into compliance with World Health Organization, national, or some other standard.

Unlike much of the research linking air pollution and human health consequences, the AQLI is based on the consequences of sustained exposure to air pollution and plausibly isolates the impact from other factors that could affect health. It serves as an important complement to the frequently used Air Quality Index (AQI), which is a complicated function of air pollution concentrations and does not map directly to health.

TOP 50 MOST POLLUTED DISTRICTS

India

Below is a list of the 50 most polluted districts, ordered by population. The table reports the increase in life expectancy if the district met India's national air quality standards and the World Health Organization's standard, respectively.

District ¹	Population (Millions) ²	Particulate Matter Pollution (PM2.5 µg/m ³ , 2015)	Increase in Life Expectancy if District Meets National Standard (40 µg/m ³)	Increase in Life Expectancy if District Meets WHO Standard (10 µg/m ³)
NCT of Delhi	15.5	98	5.9	9.0
North 24 Parganas (Kolkata)	10.5	45	0.5	3.6
Mumbai Suburban (Mumbai)	9.5	44	0.4	3.5
Pune	8.4	46	0.6	3.7
South 24 Parganas (Kolkata)	8.4	42	0.2	3.3
Bardhaman	8.1	51	1.2	4.2
Thane	7.7	43	0.3	3.4
Bangalore	7.4	24	0.0	1.4
Paschim Medinipur	7.0	45	0.5	3.6
Jaipur	6.7	51	1.2	4.3
Murshidabad	6.7	55	1.6	4.7
Ahmadabad	6.6	36	0.0	2.7
Nashik	5.7	37	0.0	2.8
Hooghly (Kolkata)	5.7	46	0.6	3.7
East Godavari	5.7	34	0.0	2.5
Patna	5.5	77	3.8	6.9
Kanpur Nagar (Kanpur)	5.5	80	4.1	7.2
Nadia	5.4	50	1.1	4.2
Madhubani	5.3	71	3.2	6.3
Guntur	5.1	33	0.0	2.4
Surat	5.0	35	0.0	2.6
Kolkata	5.0	44	0.4	3.5
East Champaran	5.0	76	3.7	6.8
Chennai	4.9	26	0.0	1.7
Howrah (Kolkata)	4.9	44	0.4	3.5
Krishna (Vijayawada)	4.8	33	0.0	2.4
Belgaum	4.8	31	0.0	2.1
Nagpur	4.7	48	0.8	3.9
Ahmadnagar	4.5	43	0.3	3.3
Jaunpur	4.4	74	3.5	6.6
Solapur	4.4	38	0.0	2.9
Allahabad	4.3	62	2.3	5.4
Muzaffarpur	4.3	80	4.2	7.3
Visakhapatnam	4.3	34	0.0	2.5
Hyderabad	4.3	32	0.0	2.3
Chittoor	4.3	24	0.0	1.5
West Godavari	4.3	33	0.0	2.4
Azamgarh	4.2	77	3.8	6.9
Ranga Reddy (Hyderabad)	4.2	33	0.0	2.3
Sitapur	4.2	81	4.2	7.3
Jalgaon	4.2	41	0.1	3.2
Lucknow	4.2	83	4.5	7.6
Anantapur	4.1	26	0.0	1.6
Bareilly	4.1	85	4.7	7.8
Malappuram	4.1	22	0.0	1.2
Kurnool	4.0	29	0.0	1.9
Purba Medinipur	4.0	42	0.2	3.3
Agra	4.0	88	5.0	8.1
Karimnagar	4.0	36	0.0	2.7
Mahbubnagar	4.0	31	0.0	2.1

¹ Major metropolitan areas that include part or all of these districts are included in parentheses.

² Ambient population estimates from LandScan Global Population Database 2011 using administrative boundaries from GADM Database. Measures of ambient population may differ from census estimates.

"The AQLI is the first tool of its kind to allow people to learn how much longer they could live in the areas where they live if air pollution is reduced to meet global or national standards. It suggests that particulates are the greatest current environmental risk to human health, with the impact on life expectancy in many parts of the world similar to the effects of every man, woman and child smoking cigarettes for several decades."

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