

SRI LANKA
AIR QUALITY INDEX
A Guide to Air Quality
and
Public Health

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SRI LANKA AIR QUALITY INDEX (SLAQI)

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Why we need an Index

Often air quality data not understood by the general public as;

- It is complicated; 1 hour average, 8 hour average, 24 hour average etc.
- Given in different units; ppm, $\mu\text{g}/\text{M}^3$
- Different standards for different countries

What is SLAQI?

- SLAQI is a communicating tool used for reporting of complex air quality data in simple form that could be understood by people of different intellectual strata.
- Tells us how clean or polluted the air that we breath and what health effects might be associated.
- Focuses on health effects that we may experience within a few hours or days after breathing polluted air.

How SLAQI is calculated?

$$\text{SLAQI} = \frac{\text{POLLUTANT CONCENTRATION}}{\text{POLLUTANT STANDARD LEVEL}} \times 100$$

Pollutant Concentration is the one we measure at the air quality monitoring station and the

Pollutant Standard Level is a constant, which gazetted as National Standard value for that corresponding pollutant by the Ministry of Environment as National Air Quality Standards to protect the health of the nation.

How does the SLAQI interpreted?

- SLAQI is a yardstick that rang from 0 to 500.
- Lower the index is, better the quality of air that we breathe.
- Value of 100 corresponds to the national air quality standard of the specific pollutant, set by the Central Environmental Authority to protect health of the general public.
- Hence SLAQI values below 100 are generally thought of as satisfactory.
- When SLAQI values are above 100, air quality is considered to be unhealthy, for certain sensitive groups, then for everyone as SLAQI values get higher and higher.

How does the SLAQI interpreted? Cont...

- Higher the value, the greater the level of air pollution and the greater the health concern;
- e.g. SLAQI value of 50 represents good air quality with little potential to affect public health, while an SLAQI value over 300 represents hazardous air quality.

Air Quality Index (SLAQI) Values	Levels of Health Concern	Color Code
0 to 50	Good	Green
51 to 100	Moderate	Yellow
101 to 150	Unhealthy for Sensitive Groups	Pink
151 to 200	Unhealthy	Red
201 to 300	Very Unhealthy	Violet
301 to 500	Injurious to health	Dark red
<i>When the SLAQI is in the above range</i>	<i>the air quality conditions are as indicated above and</i>	<i>represented by the above color.</i>

SLAQI: Particle Pollution

Index Values	Levels of Health Concern	Cautionary Statements
0-50	Good	None
51-100*	Moderate	Unusually sensitive people should consider reducing prolonged or heavy exertion.
101-150	Unhealthy for Sensitive Groups	People with heart or lung disease, older adults, and children should reduce prolonged or heavy exertion.
151-200	Unhealthy	People with heart or lung disease, older adults, and children should avoid prolonged or heavy exertion. Everyone else should reduce prolonged or heavy exertion.
201-300	Very Unhealthy	People with heart or lung disease, older adults, and children should avoid all physical activity outdoors. Everyone else should avoid prolonged or heavy exertion.
301-500	Injurious to health	People with heart or lung disease, older adults, and children should remain indoors and keep activity levels low. Everyone else should avoid all physical activity outdoors.

How does the SLAQI interpreted? Cont...

- The SLAQI considers the “worse scenario”; where the maximum of individual pollutant indices at a monitoring station is taken as the overall index for the corresponding geographical area.
- Rational for this ????
- For example, if for today SLAQI of Sulphur Dioxide 38, Carbon Monoxide 17, Nitrogen Dioxide 28 and for PM10 58,

Overall SLAQI value would be 58, and air is of Moderate Quality, irrespective of the fact all the other pollutants fall within the “Good” range.

Public Health application of SLAQI:

"Local air quality is unhealthy today."

"Today's Air Quality Index is 105, which is unhealthy for sensitive groups."

"It's a code red air quality day for ozone."

Application of SLAQI

Here is the type of report you might hear or read in the future:

- *Tomorrow will be a code red air quality day for Colombo City Center. The morning traffic, and smoke from the Kelanythissa thermal power plant are expected to cause particle pollution to rise to unhealthy levels. People with heart or lung disease, older adults, and children should avoid strenuous activities.*

THANK YOU

