

AIR QUALITY MONITORING USING IOT

Team :

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INTRODUCTION:

Air quality management refers to all the activities a regulatory authority undertakes to help protect human health and the environment from the harmful effects of air pollution. Air quality management refers to all the activities a regulatory authority undertakes to help protect human health and the environment from the harmful effects of air pollution.

ABSTRACT:

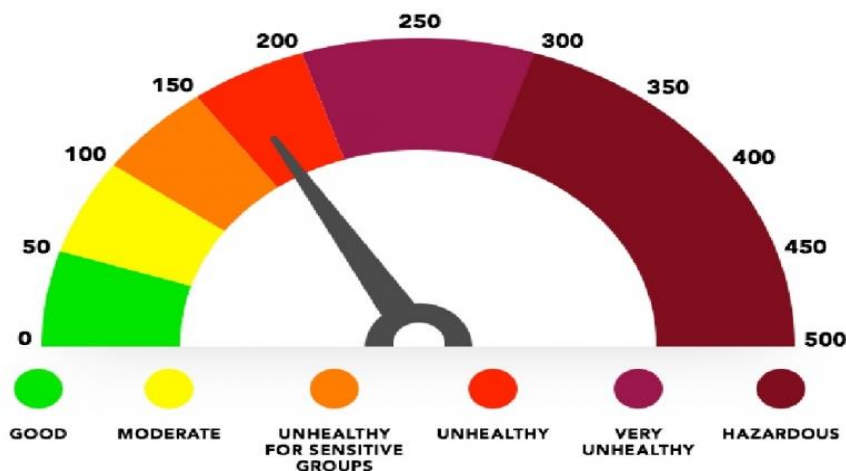
1. In most urban areas of the world, particulate matter (PM) levels pose severe problems, addressed in several policy areas (air quality, climate change, and human health). PM presents multiple challenges due to the multitude of its sources, spanning many sectors of economic activity as well as nature, and

- due to the complexity of atmospheric processes involved in its transport and secondary formation.
2. For the authorities, the goal is to assure minimal impacts of atmospheric PM levels, in practice represented by compliance with existing regulations and standards. This may be achieved through an air quality management plan (AQMP).
 3. The main purpose of the AQMP development process is to establish an effective and sound basis for planning and management of air quality in a selected area.
 4. This type of planning will ensure that significant sources of impacts are identified and controlled in the most cost-effective manner. The choice of tools, methods and input information is often dictated by their availability, and should be evaluated against current best practices. Important elements of the AQMP are the identification of sources and development of a complete emission inventory, the development and operation of an air quality monitoring programme, and the



development and application of atmospheric dispersion models. The development of the AQMP will take into account

5. : Air Quality Management System (AQMS) requirements, operational and functional structure requirements, source identification through emission inventories, source reduction alternatives, which may be implemented, mechanisms for facilitating interdepartmental cooperation in order



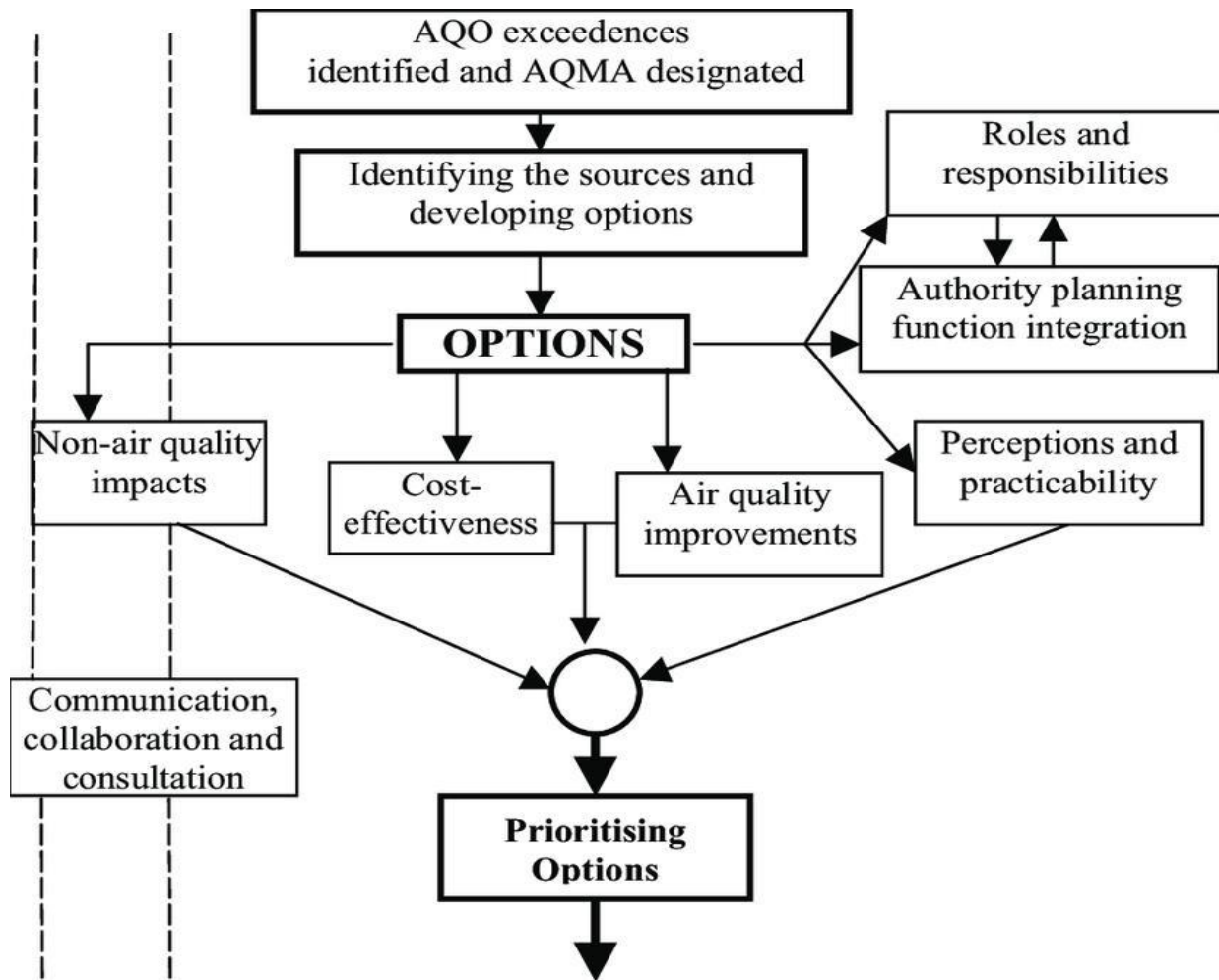
to assure that actions are being taken and institutional building and training requirements.

Five major pollutants

EPA establishes an AQI for five major air pollutants regulated by the Clean Air Act. Each of these pollutants has a national air quality standard set by EPA to protect public health:

- Ground-level ozone
- Particle pollution (also known as particulate matter, including PM2.5 and PM10)
- Carbon monoxide
- Sulphur dioxide
- Lead
- Ozone

AIR QUALITY PLANNING



Air Now – is your one-stop source for air quality data. Our recently redesigned site highlights air quality in your local area first, while still providing air quality information at state, national, and world views. A new interactive map even lets you zoom out to get the big picture or drill down to see data for a single air quality monitor.

Air Now Fire and Smoke Map – is designed to provide the public additional information on levels of particle pollution (PM_{2.5}) in the air during fires.

Air Quality Flag Program – each day your organization raises a flag that corresponds to how clean or polluted the air is. The colour of the flag matches EPA's Air Quality Index (AQI): green, yellow, orange, red, and purple.

Air Sensors Toolbox – Air sensor monitors that are lower in cost, portable and generally easier to operate than regulatory-grade monitors are widely used in the United States to understand air quality conditions. The EPA is involved in the advancement of air sensor technology, including performance evaluations of sensor devices and best practices for effectively using sensors.

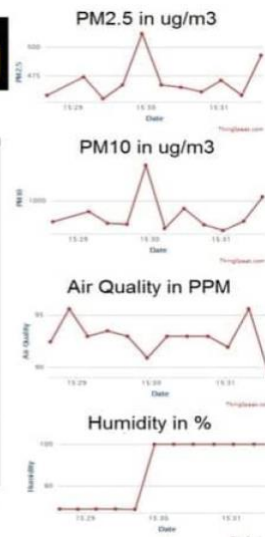
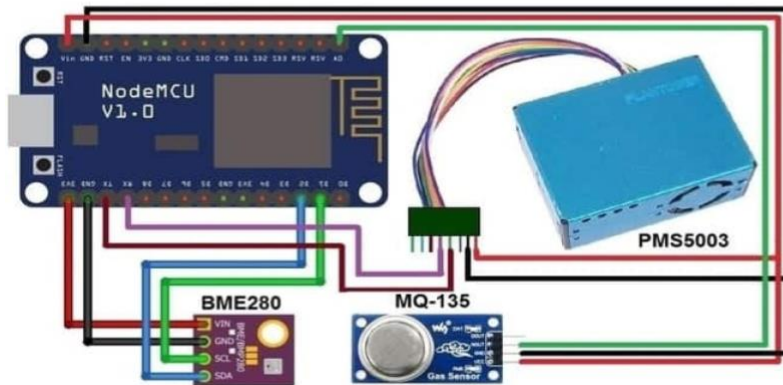
Emission Inventories

The National Emissions Inventory – (NEI) is a detailed estimate of air emissions that include criteria pollutants and hazardous air pollutants.

AIR POLLUTION MONITORING

Air Pollution Prevention Cyclone

IoT Based Air Pollution Monitoring



Conclusion:

The health of the public, especially those who are the most vulnerable, such as children, the elderly and the sick, is at risk from air pollution, but it is difficult to say how large the risk is. It is possible that the problem has been over-stressed in relation to other challenges in the field of public health.

As we have seen, there are considerable uncertainties in estimating both exposures and effects and their relationships. It may be, for example, that the effects of long-term exposure to lower concentrations of air pollutants could be more damaging to public health than short-term exposure to higher concentrations. For this reason alone, local authorities could take action to assess and improve local air quality. It is not sufficient to wait for an episode of severe air pollution and then try to deal with its effects.

However, the old and the young, and especially those suffering from respiratory or heart diseases, are the groups who are most vulnerable to the effects of air pollution. It is only right that cost effective action

should be taken to provide them with clean air, which The Times of 1881 described as “the first necessity of our existence.”