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 IF I COULD INVENT SOMETHING NEW

Urban areas are areas that have a strong culture with an incredible amount of challenges which get increasingly extreme every day. But recently, there has been a lot of concern about air pollution in urban areas worldwide. Because of this, it makes people living in urban areas prone to diseases and infections. But, how can we decrease air pollution through a device?

Urban areas have a high amount of air pollution mainly because the key pollutants are abundant there. Examples of these pollutants are particulate matter (PM), nitrogen dioxide (NO2), Sulphur dioxide (SO2), carbon monoxide (CO) and ozone (O3). These pollutants are brought through vehicle emissions, industrial emissions and many more. And, these pollutants can have a harmful impact on your health causing respiratory diseases and cardiovascular problems.

In an attempt to try and remove a reasonable amount of air pollution, devices like air quality monitoring systems have to be made. In managing urban air qualities there are some challenges that have to be taken care of before accession of pollution levels. In urban areas there is a very little amount of electricity, there is not correct processing of data and there is low data and information accessibility. So an air quality monitoring system has to be made which has real time data collection, analysis and dissemination. The device has to control energy usage.

The device name will be called an Urban Air Quality Monitoring System (UAQMS). A sensor technology made of electrochemical sensors will be used so as to recognize various gases and contaminants in the air and produce electrical signals in similar proportion to the gas concentration. The device will also require a wireless communication method for real time data transmission. And for data analysis and visualisation, there will be algorithms for calculating Air Quality Index (AQI) and there will be a user friendly interface such as a web portal

Although the device can be costly to build, it has a positive impact on an individual. For example, this device can empower individuals to make informed decisions, reducing healthcare costs related to air pollution-related illnesses. It also informs policymakers and city planners for targeted interventions like emission controls and urban design improvements. Adding to the previous benefits, it also fosters awareness and activism through transparent and accessible air quality data. But if this plan is to be carried out well, there is going to have to be a very good development strategy. Considerations for sensor placements should be around high traffic areas, industrial zones and residential neighbourhoods. Also ensuring continuous operation and data accuracy through sustainable power sources and regular maintenance. And safeguarding user information and complying with regulations like GDPR.

This device could have plenty of positive impacts including public health benefits, environmental sustainability and community engagement. Also for this to happen, there needs to be an advocate for adoption of monitoring systems by government, businesses and communities for a better and livable urban environment.