



AIR POLLUTION IN INDIA

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ABSTRACT

Air pollution in India is a serious health issue. Of the 30 most polluted cities in the world, 21 were in India in 2019. As per a study based on 2016 data, at least 140 million people in India breathe air that is 10 times or more over the WHO safe limit and 13 of the world's 20 cities with the highest annual levels of air pollution are in India. 51% of the pollution is caused by industrial pollution, 27% by vehicles, 17% by crop burning and 5% by other sources. Air pollution contributes to the premature deaths of 2 million Indians every year. Emissions come from vehicle and industry, whereas in rural areas, much of the pollution stems from biomass burning for cooking and keeping warm. In autumn and spring months, large-scale crop residue burning in agriculture fields – a cheaper alternative to mechanical tilling – is a major source of smoke, smog and particulate pollution. India has a low per capita in 2015. Government of India, together with IIT Kanpur launched the National Air Quality Index.

Introduction :-

Natural component of fresh air consists of 78.1 percent nitrogen, 21 percent oxygen, 0.95 percent Argon and 0.04 percent carbon dioxide. When these typical percentages of air components are irregular due to the influence of several noxious gases then our surrounding environment becomes polluted. There are some examples of harmful elements of air like hydrocarbon gases, carbon monoxide, nitrogen oxides, sulphur dioxide, hydrogen and some greenhouse gases including carbon dioxide, nitrous oxide, methane and many more.

This article foregrounds the challenges India is currently facing in educating air pollution and bringing the level of air quality to a certain standard. It also discusses solutions that could be adopted to combat the national Crisis. Rising urbanisation, booming industrialisation, and associated anthropogenic activities are the prime reasons that lead to air pollutant emissions and poor air quality. It is expected that by 2030, around 50% of the global population will be residing in urban areas.

Causes :-



Cooking fuel in rural India is prepared from a wet mix of dried grass, fuelwood pieces, hay, leaves and mostly cow/livestock dung. This mix is patted down into disc-shaped cakes, dried, and then used as fuel in stoves. This is called. When it burns, it produces smoke and numerous indoor air pollutions. at concentration 5 times higher than coal. That's why women who live in village and make food on this dried mixture are suffering from numerous breathing diseases.

Fuel and biomass burning isn't necessary :-

A rural aburo stove using biomass cakes, fuelwood and trash as cokoing fuel. Surveys suggest over 100 million households in india use such stoves every day, 2-3 times a day. clean burning fuels and electricity are unavailable in rural parts and small towns of india because or poor rural highways and limited energy generation infrasturcture.



Fuel woods and biomass burning is the primary reason for near - permanet haze and smoek observed above rural and urban India, and in satellite pictures of the country. Fuelwood and biomass cakes are used for cooking and general heating needs,. These are burnt in cook stoves kown as chullah or chula piece in some parts of India. These cook stoves are present in over 100 million indian households, and are used two to three times a day, daily. Some reports, inlcuding one by the world health organization, claim 300,000 to 400,000 people die in idnai because of biomass burning and use of chullhas. The carbon containing gases released from biomass fuels are many times more reactive.

Fuel adulteration :-

Some Indian taxis and auto-rickshaw run on adulterated fuel blends. Adulteration of gasonline and diesel with lower priced fuels is common in south Asia, including India. SOme adulterants increase emissions of harmful pollutants from vehicles, worsening urban air pollution. Financial incentives arising from differential taxes are generally the primary cause of fuel adulteration. In India and other developing countries, gasoline carries a mush higher tax than dieser, which in turn is taxed more than kerosene meant as a cooking fuel, while some solvents and lubricants carry little or no tax.

Traffic congestion :-

Traffic congestion is severe in India's cities and towns. Traffic congestion is caused by several reasons, some of which are : Increase in number of vehicles per kilometre of available roads, a lack of Intra-city expressways Networks, lack of inter-city expressways, traffic accidents and chaos due to poor enforcement of traffic laws.

Traffic congestion reduces the average traffic speed. At low speeds, scientific studies reveal that vehicles burn fuel inefficiently and pollute more per trip. For example, a study in the United States found that for the same trip, cars consume more fuel and pollute more if the traffic was congested, than when traffic flowed freely. An average trip speeds between 20 and 40 Kilometres per hour, the cars pollutant emission was twice as much as when the average speed was 55 to 75 kilometres per hour. At average trip speeds between 5 and 20 kilometres per hour, the cars pollutant emissions were 4 to 8 times as much as when the average speed was 55 to

Greenhouse gas emissions :-



Climate change in India is having profound effects on India, which is ranked fourth among the list of countries most affected by climate change in the year 2015. India emits about 3 gigatonnes (GT) CO₂ of greenhouse gases each year : about two and a half tons per person, which is less than the world average. The country emits 7% of global emissions, despite having 17% of the world population. Temperature rises on the Tibetan Plateau are causing Himalayan glaciers to retreat, threatening the flow rate of the Ganges, Brahmaputra, Yamuna and other major rivers.

Top 13 Cities in India with the Highest level of PM 20.5

Cities	PM 2.5 Levels
Delhi	153
Patna	149
Gwalior	144
Raipur	134
Ahmedabad	100
Lucknow	96
Firzabad	96
Kanpur	93
Amritsar	92
Ludhiana	91
Prayagraj	88
Agra	88
Khanna	88

Conclusion :-

Urbane air pollution has long been a serious problem in India, reflecting both the importance of highly polluting industries for the national economy and political factors such as the low priority of environmental issues and lack of public participation. Also it affects everything including the environment such as public health in India is in serious risk and environmental impact on the climate which is an important factor for agriculture that Indians depend on for living. However, the Indian government has some solutions, for example switching to a cleaner fuel, setting rules to reduce the emissions, and doing campaigns to spread knowledge about the effects of pollution and about how they can personally help out will be important to create a culture that values the environment.

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