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## Air as Sustainable resource & Hazards behind Air Pollution

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**Abstract:** *Now in these days, we must have to focus concern about air pollution because it might affect living organism including human & their health. The fact about it is that most of the time the air pollution levels are low. The air is certainly a lot cleaner today than in the days of the smog's of the 1950's, when smoke bleached out from factory chimneys and around everyone had a coal fire. But if we are concerned & focus about air pollution then there is a free and easy to use service which allows us to check levels in our area. This Information service is managed by the Department for Environment Food by the Governments and the devolved administrations 'and Rural Affairs (DEFRA), which provides detailed and easily & understandable information on air pollution which is completely free of charge.*

**Key Words:** organism, air pollution levels, Information service, Environment Food, administrations.

We have right get accurate and comprehensive information about air that we inhale. In air pollution we introduced about the chemicals in atmosphere, particulates, or biological materials which make discomfort and causes disease, or death to humans, and may damage other living organisms such as food crops, or damage the natural environment or built environment.

The World Health Assembly (WHA)68 resolution on "Health and the environment which explain effect of air pollution on health" adopted in 20152 and provide roadmap for the enhanced global response. It has been agreed by WHA in 2016 (WHA692) the WHO (World Health Organisation) by the Department of Climate Change, the Environment and Health activities aim to address urgent public health need to respond to the effects associated with air pollution.

**Cause of Air Pollution-** There are two main cause of air pollution are as-

\* Major primary pollutants are produced by human activity include.

\* Minor secondary pollutants are produced by natural accidents.

**Major primary pollutants produced by human activity-** The human causes air pollution mainly by due to the Burning of organic material and due the construction work. Some important primary pollutants are as-

**Sulphur oxides (SO<sub>x</sub>) as a pollutants-** sulphur dioxide is a chemical compound having formula SO<sub>2</sub> which is mainly produced by various industrial processes. The coal and petroleum also contain sulphur compounds which after their combustion generates sulphur dioxide. SO<sub>2</sub>, readily gets oxidised in the presence of a catalyst such as NO<sub>2</sub> and forms H<sub>2</sub>SO<sub>4</sub>, which results in acid rain. This is one of the causes for concern over the environmental impact of the use of these fuels as power sources.

**Nitrogen oxides (NO<sub>x</sub>) as a pollutant -** Among nitrogen oxides nitrogen dioxides (NO<sub>2</sub>) is most hazardous reddish-brown toxic gas having characteristic sharp & biting odour. This gas generally expelled from high temperature combustion & also produced naturally electric discharge from thunderstorms. It is the most prominent pollutants out of several nitrogen oxides.

**Carbon Carbonmonoxide (CO) as a pollutant -** This is the most important pollutant obtained from incomplete combustion of fuel such as natural gas, coal or wood a colourless, odourless, which have 300 time more binding affinity with haemoglobin in comparison to oxygen molecule so it causes respiratory discomfort. It is non-irritating but very poisonous gas. Exhaust obtained from vehicles is the major source of carbon monoxide.

**Particulates as a pollutants-** Small particles present in air in different form of matter, or fine particles, are tiny particles of solid or liquid suspended in a gas are called as particulates. When particle & air present



together then they are called as aerosol. Sources of particulates in nature can be manmade or natural. Some particulates are found nature, such as particles originating from volcanoes, forest and grassland fires, living vegetation, dust storms, and sea spray. The humans are also responsible for such types of pollution such as burning of fossil fuels in vehicles, power plants and various industrial processes which generate significant amounts of aerosols. As the particles increases in the air which are linked to health hazards like heart disease, lung disfunction and lung cancer. Ammonia (NH<sub>3</sub>) - emitted from agricultural processes. Ammonia is a compound with the formula NH<sub>3</sub>. It is normally encountered as a gas with a characteristic pungent odor. Ammonia, either directly or indirectly, is also a building block for the synthesis of many pharmaceuticals. Although in wide use, ammonia is both caustic and hazardous.

**Radioactive pollutants-** This is the most serious source cause of pollution which may vanish the human existence on this planate & it may produce by nuclear explosions, nuclear events, war explosives, and natural processes such as the radioactive decay of radon.

**Minor secondary pollutants produced by natural accidents-** Small particles i.e. Particulates generated photochemical smog which include gaseous primary. Smogis also considered as type of air pollution. Smog mainly obtained from large amounts of coalburning in different industrial processwhich contain mixture of smoke and sulphur dioxide. In these modern days smog does not mainly come from coal but obtained from vehicular and industrial emissions which by action of ultraviolet light in the atmospherefrom the sun and form secondary pollutants that also combine with the primary emissions and form photochemical smog.

**Hazardous effect of air pollution on health-** Disease affecting respiration

\* There are several respiratory affect lungs and causes emphysema, asthma chronic obstructive pulmonary disease (COPD)3.

\* The particulate matter & nitrogen oxide causes Chronic Bronchitis.

\* A major public health hazard was confluence by COVID-19 pandemic in 2020 which spread about all over word which is an example of well-established connection between air pollution and respiratory tract infection. A study linked wildfire smoke with additional COVID-19 cases and deaths4.

Disease affecting Circulatory system

\* Small particulate matter suspended in air when enter in blood circulation system then it can impair blood vessel function and speed up calcification in arteries.

\* NIEHS researchers established links between short-term daily exposure by post-menopausal women to nitrogen oxides and increased risk of haemorrhagic stroke5.

\* A general study on older Americans shows that their exposure to TRAP can decreases the low levels of high-density lipoprotein. These lipoprotein is sometimes called as good cholesterol, which increases the risk for cardiovascular disease.

\* According to a report of National Toxicology Program (NTP), The exposure of TRAP also increases a pregnant woman's risk for dangerous changes in blood pressure, which is known as hypertensive disorders, and are a leading cause of pre-term birth, low birth weight, and maternal and fetal illness and death.

**Cancer**

\* A large study of more than 57,000 women found living near major roadways may increase a woman's risk for breast cancer.

\* The study of NIEHS Sisterthere are several other airborne toxic substances werefound, such as especially methylene chloride, which is used in aerosol products and paint removers, these are also associated with increased risk of breast cancer.

\* Long-time exposure exposure of benzeneand component of gasoline on professionals in chemical industries,



can cause leukemia and is associated with non-Hodgkin's Lymphoma.

\* A long-term study have been done far, 2000-2016, found an association between lung cancer incidence and increased reliance on coal for energy generation.

**Conclusion-** Water purity parameter will have to maintain to give a gift to next generation & to be healthy in current scenario of living style. There were several attempt has been made as well need to do some more effort to make our holly air pure and pollution free.

The central government has started good initiative and provided funding for the procurement of nearly all the wheat and rice produced in Punjab and Haryana and at a relatively high Minimum Support Price (MSP). Besides this some state governments start provide free electricity to all farmers for pumping groundwater so that leading huge fiscal outlays as well as incentivising cultivation of water-intensive paddy6.

The 'PaniBachao Paisa Kamao' project is the example of the potential of replacing free electricity with a direct benefit transfer for the value of electricity saved.

There is a very good example is the effort made by Individual farmers as well as Farmer Producer Organization in Punjab and Haryana unable to find out successful alternative models of market-linked agricultural production to emulate. With modification or without modifications for the prevailing subsidy regime, demonstrating profitable alternate models can incentivise and accelerate diversification. The philanthropy can invest in establishing exemplar value chains & from scientific input availability to storage, transport, processing, and marketing of alternate crops, demonstrating that production of such crops can be remunerative.

A good and innovative work done by Northwest India's agricultural universities and institutions, plays a very important role&critical part of the Green Revolutionsuch as Punjab Agricultural University (PAU) and the Indian Agricultural Research Institute (IARI). They educated scientist and supported agronomy research which provided extension services to farmers. Now, their activities remain largely focused on increasing production of paddy and wheat.

Public procurement of paddy and wheat from Northwest India forms a significant fraction of the food grain supply for India's Public Distribution System (PDS).

#### REFERENCES

1. AirPollution<https://www.basingstoke.gov.uk/content/page/26744/Air:20pollution:20-:20what:20it:20means:20for:20your:20health.pdf>
2. [http://apps.who.int/gb/ebwha/pdf\\_files/WHA68/A68\\_18-en.pdf](http://apps.who.int/gb/ebwha/pdf_files/WHA68/A68_18-en.pdf)
3. Wildfire severity increases, experts call for coordinated federal response. The American Thoracic Society co-funded the workshop report with NIEHS and the U.S. Environmental Protection Agency.
4. COVID-19 research grants get rapid NIEHS funding. <https://factor.niehs.nih.gov/2020/5/feature/2-feature-covid-19-research/index.htm>.
5. Air Pollution and Your Heart.[https://www.niehs.nih.gov/research/supported/translational/peph/podcasts/2015/sep30\\_air-pollution/index.cfm](https://www.niehs.nih.gov/research/supported/translational/peph/podcasts/2015/sep30_air-pollution/index.cfm).
6. Reducing air pollution due to stubble burning in Northwest India.<https://idronline.org/reducing-air-pollution-due-to-stubble-burning-in-northwest-india/>

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