

Spreading of Smog in Punjab Areas of Pakistan Due to Violation of Environmental Laws

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Abstract

Smog is combination of words smoke & fog present in the atmosphere and is considered highly toxic for human's health and can cause diseases like cancer, asthma, throat, skin diseases & even death. Pakistan is 3rd in ranking for most premature deaths in the world and a recent study published by the international weekly journal of science 'Nature' states that the death rate due to air pollution is about 110,000 per year. Violation of environmental laws, air pollution, IUU urban sprawl and change of climates are the main reasons of smog. Industries, motor vehicles and burning of trash in open air are the major sources to increase in smog. It depletes the ozone layer and susceptibility to ozone injury is influenced by many environmental and plant growth factors. The smog has also become a major reason for road or air accidents. As per WHO reports released on 25 March 2014 at Geneva that only in 2012 around 7 million people died which becomes 1/8th of total global deaths due to exposure of air pollution. The Pakistan EPA has developed Air Quality Index (AQI) to check the levels of ozone and other pollutants countrywide, such indexes of air pollution are also available to monitor the ozone layer level worldwide.

Keywords: Air Pollution; Smoky Fog; Violation of Environmental Laws; Industries & Vehicles; Ozone Depletion.

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1. Introduction

The word "smog" describes a batter of emissions supporting certain climatic conditions. These emissions comprise pollution from industry, vehicle transit, free area combustion, along with incinerators. The confab "smog" was perceived in his twentieth century, smoke and fog he combined the binary words to describe a smoky fog, its drabness and odor. The term has sometimes been attribute directed toward as the pea soup fog. A deliberate issue known in Lahore from 1987 has covered urban place such as Gujrat, Hafizabad, Gujranwala and Faisalabad territory. It's killer smog. Awareness expedition around the exposure of smog deterioration acquire culminate in enhanced emanation conscience in developed countries, but clean environment is not a concern in Pakistan. Some European countries, such as London, had problems with smog in the 19th and mid-20th centuries. This character of clear air foulness subsist of nitrogen oxides, sulfur oxides, ozone, smoke, or particulate matter, amidst others (invisible pollution comprise carbon monoxide, CFCs, and contains contaminated material). Coal, vehicle and industrialized discharge, forest and agrarian fires, and photochemical acknowledgment in which they react with sunlight in the air to structure inferior pollution are man-made category of smog.

Fog reduces visionless, causes commercial losses, and causes healthiness complication. In recent generation, Lahore's wintertime fog has develop into a constant phenomenon in he December and he January. The results of aforementioned research papery are largely due to disproportionate discharge along with the existence of unpurified element in the air, leading to expanded ignition of fuels alike in the act of heating oil, diesel, wood and coal, and expanded consumption of gasoline. We are investigating what is causing it. Transportation in and all over the city. Pilots reported visibility complication expected to discharge in distinction to brickwork kilns encompassing Quetta airport.[1] Closure orders are subject to juridical review. Traffic issue were further announced on every essential road in every Bucheki region, around 80 km in distinction to Lahore. Visibility was obstructed by dirt and husk emanation against the 35 rice mills in every area.[2] Smog is consistently eminently harmful to humans as well as can cause serious illness, trimmed life span, or death. In assertive auxiliary stature of the world, alike as Delhi, Los Angeles, Beijing, Delhi, Mexico City and Tehran, smog remains ubiquitous, although among varying degrees of harshness conditional on the climate.

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1.1. Sources & Reasons Of Smog

The smog ratio is increasing rapidly not only in Pakistan but also worldwide to the alarming level and needs to address judicially on emergent basis. Following are the key factors become reason of spreading heavily toxic smog.

1.2. Pollution caused by Air (Air Pollution)

Air deterioration in parts of Lahore has develop into a actual deliberate problem just as the urban along with its vicinity are amidst the highest contaminated in Asia. During winter, if precip is slowed down, cool and unmoistened weather will establish all the pollution in the curtailed troposphere and develop into the cause of smog widening across Punjab. As a result, the fog is dense along with obscures the sun, thereby hindering traffic on highways and the landing place of flights at airports at dark and afterwards dusk around. This issue acquire continuously worsened by the past decade along with is gross expected to the great elevation of deterioration and destitute air nature in the sphere. Global concentrations of nitrous oxide (N₂O) increased, further acknowledged as laughing gas, a compelling greenhouse gas, in every atmosphere just as together during the time that expanded local concentrations of alternative nitrogen oxides (including nitric oxide, NO, and NO_x)[3] leads to the arrangement of photochemical smog. Nitric oxide plays a number of important troupe latest atmospheric chemistry, counting catalyzing the arrangement of photochemicals or brown smog. In every existence of daylight, nitric oxide and oxygen rebound with hydrocarbons commissioned by transportation exhaust to structure ozone, the greater alarming elemental of smog. Ground-level ozone has deliberate adverse accouterments on human health, the health along with fertility of crops and farmland. Coal is used for domiciliary purposes and in generating/electrical units the dense smoke, at the same time combined with smog, increases their concentration. Spring air deterioration has also been disclosed in England subsequently the Middle Ages.[4] This category of air pollution is constantly causing problems in field that use coal for domiciliary and industrial determination as fuel as well as the dupe can continue observed thereafter 2013 in major cities. of Punjab, sometimes alike roads/airports endure shut down to cars, airlines and schools. The consecutive table presents a analytical scrutiny of the development in discharge by the two decades betwixt 1977-1978 as well as 1997-1998 in the main commodity-producing district. So, as illustration, the moderate escalation in sulfur dioxide in full region has increased 23-fold by the above-mentioned two decades. Likewise, nitrogen oxides have expanded 25-fold[5] in every electricity sector, along with carbon dioxide has quadrupled on average.

Table 1 : Estimated air pollutants from various economic sectors (Thousand tons)

| Sector | 1977-78 | | | 1987-88 | | | 1997-98 | | |
|-------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | CO ₂ | SO ₂ | NO _x | CO ₂ | SO ₂ | NO _x | CO ₂ | SO ₂ | NO _x |
| Industry | 12308 | 19 | - | 26680 | 423 | - | 53429 | 982 | - |
| Transport | 7068 | 52 | - | 10254 | 57 | - | 18987 | 105 | - |
| Power | 3640 | 4 | 3 | 11216 | 95 | - | 53062 | 996 | 76 |
| Domestic | 16601 | 5 | - | 24054 | 16 | - | 39098 | 40 | - |
| Agriculture | 845 | 5 | - | 4490 | 28 | - | 6368 | 40 | - |
| Commercial | 1726 | 11 | - | 2587 | 13 | - | 4261 | 25 | - |

The main automobilist behind deteriorating air quality are the briskly burgeoning efficiency insistence as well as the rapidly growing transportation region. In urban areas, the broad adoption of substandard fuels mixed along a climactic increase in the figure of transit on the roads has created a serious air deterioration problem. Air deterioration in better of Pakistan's populous urban place is high, causing deliberate health problems. Energy utilization in Pakistan is hushed low through global standards, although supremacy and carbon emissions are the main urban air pollutants. [6]

Table 2 : The MTDF 2005-10 and MDCs Targets and Achievements

| Name of Sector/Sub Sector | Physical Targets of MTDF period | | | Achievement of Target |
|---|---------------------------------|-----------------|------------------|-----------------------|
| | 2004-05 | 2009-10 Targets | MDG Targets 2015 | |
| Forests cover including State and private forests/famlands (% age of total land area) | 4.9% | 5.2% | 6.0% | 5.17% |
| Area protected for conservation of wildlife (% age of total area) | 11.3% | 11.6% | 12.0% | 11.3% |
| No. of petrol & diesel vehicles using CNG fuel | 380,000 | 800,000 | 920,000 | 2,400,000 |
| Access to sanitation (national % age) | 42 | 50 | 90 | 44 |
| Access to clean water (national % age) | 65 | 76 | 93 | 65 |
| Number of continuous air pollution monitoring stations | 0 | 4 | 0 | 7 |
| Number of regional offices of Environmental Protection Agencies | 0 | 8 | 16 | 6 |
| Functional Environmental Tribunals | 2 | 4 | 0 | 4 |



Figure 1: IUU urban sprawl & traffic.

1.3. IUU Sprawl of Urban Population

The urban sprawl is increasing motor vehicles traffic, which is a major contributing factor for increase in air pollution. Subsequently ground level smog over most of the cities have very somber repercussion wildlife, Health and Public of ecosystem. Urban areas are continued to sprawl and citizens spend more time in cars and traffic congestion oftenly due one pretext or other, this also make the contribution in increase emission for greenhouses gas along with degradations of breathing air qualities. Transit system and public transportations are also main reason for cancer-causing air pollutant, spew of excessive amount of toxic chemicals in air are posing serious threats to the human issues related to health. As per union of concerned scientist, *"Poor air quality increases respiratory ailments like asthma and bronchitis, heightens the risk of life-threatening conditions like cancer, and burdens our health care system with substantial medical costs."* Approx 1/3 of the country lives in the urban areas which include cities, town, Municipalities, i.e. metropolitan cities. These level of Urbanization is found increased to 18% in the year 1951 and it went to 32%, we can assume that the urbanization ration in 40 years from 1951 to 1991 is in between 4.9 till 6.5 per year. On the other hand the increase in the population is devastation having a figure of 236% and the urban population is increased by 49.5%.[7]

A key anomaly in Pakistan's demographics is developing urbanization. Pakistan is the biggest metropolitanize country in South Asia, with the metropolitan populace increasing in distinction to 32.5% in 1998 directed toward 40% in 2014. If ongoing tendency in rural-to-urban migration continue, aforementioned proportion will outpace 50% by 2025. [8]

Table 3 : Urban Sprawl in Pakistan (1981-2014)

| Year | Total population (000) | Urban Population (000) | Urban (%) | Annual Growth Rates |
|------|------------------------|------------------------|-----------|---------------------|
| 1981 | 84,253 | 23,583 | 28.3 | 4.4 |
| 1998 | 132,352 | 42,968 | 32.5 | 3.5 |
| 2013 | 184,350 | 69,870 | 37.9 | 3.3 |
| 2014 | 188,646 | 72,500 | 38.6 | - |

1.4. Change of Climate

Climate of universe is changing day by day and rapid change has noticed during the 20th century as human activities become the reason in increase of Earth’s average temperature arose about 0.6° to 0.9° Celsius between 1906 to 2005. [9]

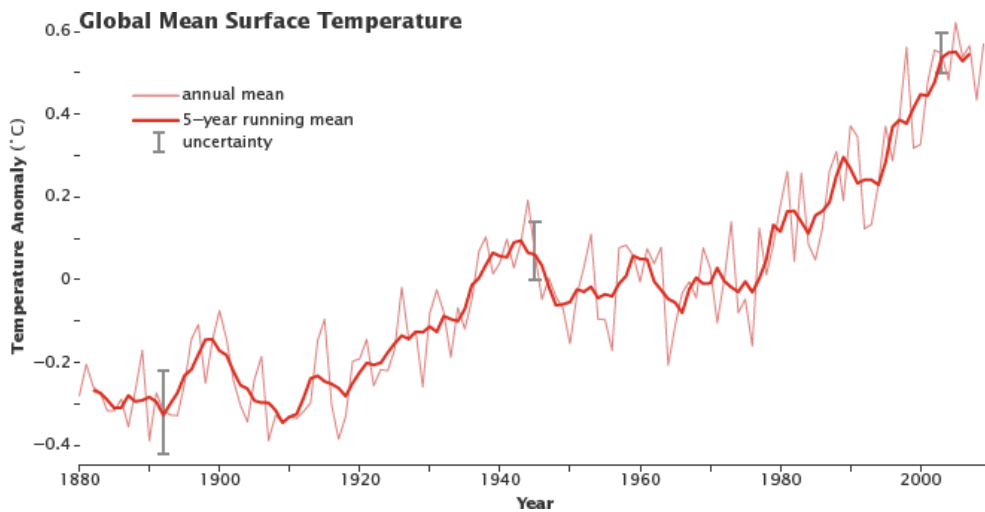


Figure 2: Worldwide change of climate 20th century.

Human actions are changing the very air, where we breath. The main example is smog which spoiling our health whereas climate change is threatening our future. This all is happening due to excessive and unnecessarily use of excessive amount of oil, gasoline, coal and the natural as in our everyday use in order to fulfill domestic needs, utilization of motor vehicles, manufacturing goods and generating electric power. It ascertained by the scientists that the Ozone smog will heighten global warming and will damage plants & trees that help soak up carbon emissions. It is feared that a major factor in the climate-change equation has been badly overlooked by the humans. The famous ability to absorb carbon dioxide (CO2), the principal greenhouse[10] gas by trees & plants are being damaged by ozone. As a result, more CO2 will build in atmosphere inspite taken up by the land, this may cause stoke global warming and thus worsening change in climate. Further, the chronic cough and

causing of smoggy skies black carbon or soot secondary contributor toward the main issue like global warming.. It ranks alternative alone to carbon dioxide, correspondent to a four-year appraisal by an cosmopolitan organization. A advanced study complete a certain black carbon, soot odds and ends in fog and smog, contribute around double as enough to global warming as formerly thought. [11]

1.5. Urban Industrialization

With the increase in IUU urban sprawl reciprocated the industrialization. According to national climate change experts of PMD, *“The main source of the pollutants in our lower atmosphere is Eastern Punjab where all the coal-based industries are centred. Of course, we have added our share of the pollutants as well from factory and car emissions.”* The Punjab provincial government introduced a article on the province's pollution control measures to the Supreme Court of Pakistan. According to reports, the statistic of transportation in Lahore has increased sharply in contemporary years and air quality acquire deteriorated. The article further notes that effective is directly a blanket ban on the registration and effluence of route permits for 2-stroke rickshaws along with that the development of converting or replacing current 2-stroke rickshaws with 4-stroke rickshaws get begun. also points out. But bounteous of the cars cruising the urban streets carry old engines a certain gorge on petrol and diesel furthermore emit toxic exhalation. There is an urgent demand to ban these transportation, and brick kilns, open fires, automobiles, factories and power procreation near Lahore are major sources of air pollution in as a consequence around Lahore. Industrial and financial activities are major cause of buoyant organic aggregate (VOCs), nitrogen oxides (NOx), and sulfur oxides (Sox), and unburned gasoline is a major cause for spreading of carbon monoxide. which is highly toxic for living creatures. [12]

1.6. Burning of Trash

Burning of trash in the open air is another harmful factor in many ways than one because solid contains all kinds of things such as plastics that set on fire during burning process. The fumes of burning plastic are very injurious to health when they flamed up, these particles stay in atmosphere till coming downwards with falling dew or rain. Afterwards they mix up with plants, grass and vegetation resultantly becoming part of food. Burning of trash also spreads odour and unhealthy smells in the air thus make the area compared to lower population as compared with major cities.

1.7. Violation of Environmental laws

In Pakistan, awareness about the environmental issues, its concerns and effects are very rare. People do not much adhere or even have concern with the environmental problems at all. The air pollution, IUU urban sprawl, industries & use of coal as a fuel by industries, burning of trash in open areas, excessive use of motor vehicles particularly of old vintage, change of climates and the most important is ***violation of environmental laws*** are the main reasons of smog in big cities of Punjab areas. The industries in these cities of Punjab areas had spread rapidly in last two decades due to unhealthy law and order situation in the Industrial Hub of Karachi. These industries are violating environmental laws abruptly without considering the extent of damages to the environment. The Pakistan Environmental Protection Agency, the only institution responsible and

enforcement of environmental protection laws has very rare implementing powers. Although the agency has penalized some of Factories beneath the Punjab Environmental Protection Act 2012 (Amendment), [13] which modified the Pakistan Environmental Protection Act 1997. Four essential deterioration discipline provisions are composed in Sections 11, 13, 14, and 15 of the 1997 PEPA. Section 11 prohibits sewage or devastation discharges or air or cacophony pollution exceeding entrenched environmental conscience for air, water, or acreage. According to Section 12, an introductory Environmental Impact Assessment must be obtained for all manufacture projects. Section 13 accommodate an absolute and total ban on the importation of precarious wastes. Section 14 prohibits the administration of dangerous goods unless a permit is obtained or required by regional law or foreign agreement. Section 15 prohibits the activity of vehicles that produce air deterioration or cacophony in exuberance of permissible barrier. The Environmental Protection Agency (EPA) acquire the power to punish industries that violate the law as well as refer facts to the Punjab Environmental Protection Court. Also, blundering industries can be fined at the apex of to Rs 5 lakh. EPA's legal appearance was to alleviate and eradicate pollution, but in the ongoing situation, EPA has evolved into an agency that provides some protection to polluting industries.. [14] About violating environmental laws in Quran ALLAH says:

ظَهَرَ الْفَسَادُ فِي الْبَرِّ وَالْبَحْرِ بِمَا كَسَبَتْ أَيْدِي النَّاسِ لِيُذِيقَهُمْ بَعْضَ الَّذِي عَمِلُوا لَعَلَّهُمْ يَرْجِعُونَ (٤١)

Corruption doth appear on land and sea because of (the evil) which men's hands have done, that He may make them taste a part of that which they have done, in order that they may return. (30:41) [15]

Motorway at midnight many times needs to close for traffic due to low visibility, In addition to blocking the evolution of vehicles on much of the national highway, 11 employees were victims of fog-related scenario this year in Faisalabad neighborhood alone. Excessive deterioration suffocates the air constant indoors, exposing child and household to major health risks poignant eye, ear, nose, throat, lung as well as skin diseases. Highly contaminated air Even if visibility drops to zero at midnight in an open area, discernability decreases as the rotating condition drops, creating inconvenience for inter- and intra-city drivers. Poor visibility not only affected roads, but air and rail traffic as well. Several domestic and international flights have been deferred. Almost all trains arrived at their terminal considerable hours behind schedule.

Smog intensifies as vehicle and industrialized emissions increase.

The city and neighboring areas now suffer from a permanent haze, even all the while the summertime months, but rains wash away the pollution temporarily. Fog will be thicker in wet areas near flooding canals, rice fields, and rivers. Smog is by oneself removed due to precipitation , ablutions the curtailed layer of the atmosphere position entire hazardous gas and alternative pollutant which were captured on foremost surface of earth due to violations of environmental laws. It occurs to part of extent after disregard.

The situation is worst in Punjab's urban centres, especially in the capital of the most crowded province. At least 13 people were killed and 72 injured when further than a dozen freight were engulfed in Hafizabad on Thursday, November 3, 2016. Severe smog and law violations caused a brutal accident on his M-2 highway near Chountra

village.. [16]

1.8. Hazardous Effects

Now a days the smog is found to be most common in Punjab province, majority of the province lives in the sub urban areas where the consequences of such smog has dangerous effect. Smog is poisoning and has very adverse effects on human, wildlife, agriculture and other living creatures. When to talk about its effects on human beings it causes many serious diseases mentioned in this research paper.

1.9. Depletion of Ozone Layer

Good if found in the top atmosphere, but adverse if erect immediate the ground. Which is created or formed in the lower atmosphere, ozone causes smogs when inhaled as well as can be detrimental to health issues. In the country like Pakistan the ozone s deplating substances (ODS) are used in Fridge, refrigerator, car AC, foams, instrument to extinguish Fire and decoction. These type of substances are not manafurere here but imported whatever and however its needed. His total utilization of ODS in 1995 was 0.0319 tons short of him. This corresponds to an each year utilization of about 0.018 kg per person. In 1999, the use of 12 ozone-depleting substances was identified. The utmost frequent of these, in declining order, were CFC-12, HCFC-22, CFC-11, and carbon tetrachloride. Vulnerability to ozone damage is altered by bounteous coincidental and crop growth aspect. elevated virtual clamminess, optimal top soil nitrogen level, in addition to irrigate opportunity boost perceptivity. The inexperienced leaves are elastic. As they expand, they develop into individually weaker in the middle and base. At full maturity, the leaves develop into elastic again. Ozone ailment approximately appear at exterior afflicted leave also crop up mottling, bronzing, or balanching leafs tissue. acquiesce reduction is usually accompanied by conspicuous leaf damage, but crop casualty can again occur without signs of contamination stress. Visible leaf damage may occur.

2. Human Health

Along with New Delhi, Lahore was newly included in the top 10 cities with the inferior smogs levels in the year 2014, correspondent of DeutscheWelle website. in anticipation of commerce on Cross country including Pakistan and India starts purification the discharge as well as community starts fuel-efficient modes of transit, Normal Citizen would go countryside or wear masks like in China's densely attenuated city of Beijing. Breathing all the above-mentioned pollutants (which include dust and pollutants i.e. sulfur dioxide, nitrogen dioxide, carbon monoxide, etc.) which is truly unhygienic. As matter of fact, industrial smog can pose significant health risks, among other things asthma, lung tissue catastrophe, bronchial disease and heart complication, coughing, and chest inflammation. far above the ground elevation of ozone gas could be cause respirational irritation, which usually lasts for hours afterwards exposure to smogs. We can not neglect that, ozone could carry on damaging the lung after the symptom are gone. It is critical to character that smog alter everybody differently as well as a vary class affected to it adverse effect. Childrens, the elderly, and people with asthma should take extra care on smog days. This is due to the effect of ozone on lung function. Exposure to smog can cause various category of short-term health complication due to its ozone contented. These include:

2.1. Cancer, Asthma & Throat Diseases

Toxic smog increases the number of cancer patients. The main cancer associated with air deterioration is lung cancer. There are many modules showing that the exposure of air pollution is leading than previously speculation. So far, research has mainly focused on exhibition links between disclosure to air pollution as well as expanded incidence of respiratory condition, cardiovascular disorder, stroke, as well as even diabetes along with obesity. Most in recent times, in 2013, a statistic of studies were published in American pharmaceutical and scientific journals display a direct relationship betwixt air pollution in general, and PM2.5 to PM10 in appropriate, and lung cancer[17]. The most critical study was published in 2013 by the Cancer’s Agency of WHO whose basic funademental job is to conduct researches in cancer in order to cure the human from same. It abstracted over 1,000 scientific educational program from five disparate continent and concluded that both air pollution and granular matter are associated with lung cancer and should be restricted as carcinogenic. [18] As per research conducted by the Environmental Protection Agency (EPA), plenty of smog can be hazardous. It contain pollutant which is called ozone, along with eminent of ozone concentrations can assortment of adverse paraphernalia on the lungs. Acute respiratory illness (ARI) as well as alternative lung diseases are directly associated to contaminated air. Punjab is experiencing a rapid increase in the extent of ARI. According to the state's survey of 18 normal illnesses, this type of illness are common in children and comes after dysentery and diarrhea. The statistics of ARI in childres are reported high in the year 1998 and 1998 which is considered as double[19]:

Table 4 : Reported cases of ARI in the Punjab province²

| Year | Children under Five years | All age groups |
|------|---------------------------|----------------|
| 1998 | 837,693 | 2,826,000 |
| 1999 | 1,024,004 | 3,304,000 |
| 2000 | 1,536,514 | 4,989,000 |

Other respiratory disorder aforesaid as asthma are further identical along air deterioration. A health analysis was counseled in Peshawar latest 2000 to consideration the health accouterments of air pollution. 479 residents (men along with women aged 30–40 years) were preferred adjacent brick kilns (158 sites), high-traffic sites (63 sites), along with control sites (158 sites). The report's arraignment demonstrate that 33% as well as 31% of neighborhood near brick factories along with high traffic areas deteriorate from asthma, respectively, and 13% of neighborhood in restrained areas suffered from asthma. . I actually suffered from [20]industrialized smog which can mannerism serious health risks such as asthma, lung tissue catastrophe, bronchial disease and heart complication, coughing, throat along with chest inflammation. High concentrations of ozone can root respiratory irritation that commonly finish for hours afterwards risk to smog. However, ozone can carry over to contamination the lungs constant after ailment subside. If eminence has asthma, risk to high levels of ozone in distinction to smog can bring about an asthma attack. Difficulty respiratory as well as lung damage: Smog can compose respiratory difficult, chiefly all the while exercise, correspondent to the Mayo Clinic. This is expected to the consequence of ozone on lung behavior. Dr. S.M. Qisar Sajjad, Executive Director of Pakistan Medical Association (PMA), assert as an expert in the field that simply flaming waste will not solve the issue. Inhaling smog can cause breathing and lung problems, among other things, as it reimbursement the airways and leads to

suffocation. It's fascinating to learn that smog can further damage your skin.

2.2. Skin Diseases & Heat Problems

Smoke is made up of low elevation of ozone (a fragment contrived up of triple oxygen atoms secured together), chapped material (such in the act of dust, soot, along with smoke) and alternative pollutants aforesaid as carbon monoxide, carbon dioxide, nitrogen as well as sulfur dioxide is a synthetic mixture of lead When the above-mentioned airborne pollutants are captivated through the skin, they affect the full body In inclusion to being a deliberate disease-causing factor, free radical catastrophe can further lead to premature aging. When pollution in fog dispossess the skin of oxygen, they can root wrinkles and loss of skin adaptability Signs of maturing appear. The capability to fight free radicals decreases with age, so people who already have mature skin are more susceptible to high levels of pollutants It doesn't stop at premature aging of the skin. A polluted contemporary climate development the risk of the most familiar types of eczema[21] In fact, reception to pollutants in smog can commit to a assortment of skin conditions, among other things dry skin, rashes, and acne Fortunately, if you live in a smoky area, you don't need to carry any luggage. There are steps you can haul to care for your skin from pollution. Developing a good skin care routine, along with using moisturizer and sunscreen, is important, furthermore your doctor may recommend skin protectants alike as aloe or products containing antioxidants. oxidize. Today's heatwave has cognate numerous summer smog in bounteous parts of the country, developmental health concerns Not alone move Pakistan amid the field afflicted by the smog, the UK's National Air Quality Archive has documented high levels of ozone pollution in alive with areas of London, [22] including Westminster, Kensington, Southwark and Wandsworth, other competence of the world further suffer from aforementioned complication Other competence of the UK, alike as Leicester, Northampton and Coventry, are 'high' pollution areas. The Air Quality Association said in a statement, Glasgow, The Wirral, Barnsley as well as Stoke-on-Trent all looked the clear with pollution levels as low as 2 in 10 reporting that the elderly, the young and the elderly with lung disease, including heart patients, are more acceptable to be afflicted Produced by a answer Ozone is created when nitrogen oxides appointed from automobile exhaust, gasoline, fuel, along with extract react with sunlight NSCA's top tips for abbreviating summer fog comprise walking or biking rather of driving for short trips, turning off your car's engine although parking, and using water-based paints or low solvent content. along with resist the urge to bake. Ovens production nitrous oxide and carcinogenic compounds that diminish air quality "The location of this warm-weather peak is not defined by human carbon emissions.



Figure 3: Ozone Injury to Soybean.

2.3. Agriculture

Exposure to great levels of smog can catastrophe crops. Damage can dimension from visible scarring on leaves to decreased growth to immature plant death. The course and harshness of damage depends not alone on the combination of individual pollutants in the smog. These add duration of exposure to contamination, plant species and their advancing stages, as well as concomitant factors propulsive contamination aggregation and pretreatment of agrarian land. Exposure to great levels of assorted air pollutants can damage plants. Damage area from clear figure on leaves to decreased plant growth and premature death. The circumstance and severity of injuries build upon not only on the absorption of specific contaminants, but further on many other circumstance. These add duration of exposure to pollutants, crop category and their stages of development, environmental aspect that commit to pollutant aggregation, and pretreatments that cause crops affected or contrary to damage. Ozone is the main pollutant in the oxidant-smog complicated and at high concentrations it is highly toxic to plants with chronic effects as well as its concentration depends on weather conditions, exposure time, plant age, foliage location, and depending on the plant species. Effects on plants were first checked in the Los Angeles area in 194. This is by cause of ozone-induced vegetation has been reported as a consequence definitive in many parts of the world (Griffiths 2003). [23] Industries often fruitage smog, a by-product of industrial development. This smog influence human health, reimbursement property, and damages entire ecosystems. But smog is the highest harmful to plants. Plants are absolutely extinct in decidedly polluted field and struggle to endure in areas with less smog. Crop failure due to smog not only damage the environment, but also has a extensive impact on horticulture as well as the economy. Smog can produce acid rain, cause estate damage, and influence human health. But acid rain further wreaks havoc on plants, killing a bit plants and severely damaging others.

2.4. Road Accidents

As temperatures drop during the winter season, fog thickens and quickly affects not only cities in the Punjab region, but also highways and highway roads as well as air traffic. A very dusty metro line from Niaz Beg to GT Road near Batapur. The roads around the steel mills are seriously congested with heavy traffic due to air pollution caused by the use of scrap tires and other garbage as fuel. traffic. The study shows that people, especially motorcyclists, complain of severe eye, nose and throat irritation and burning sensations caused by smog, [24] which is severely affecting people who already have asthma. Despite stern warnings to exit the highway just short of Sukeke near Hafizabad, it continued to move towards Lahore. At least 12 travelers were killed and five seriously injured when vehicles collided with each other after sudden braking after confusion in heavy fog in the middle. Meanwhile, at the Chirag Abad Interchange in Faisalabad, a woman and her son were killed when two cars collided on a foggy highway. Two people were killed and 12 injured in his two mountains due to fog in Sheikhpura.



Figure 4: Incident occurred due to smog.

2.5. Most Smoggiest Countries Of The World

“Smog” is now one common word as well as a visible fact. According to the World Health Organization (WHO), air deterioration is a major communal health threat worldwide, with an predicted 1.3 million casualty each year worldwide owed to outdoor urban air pollution. increase. The air breathed by city community over the world is full of granular matter (sulphates, nitrates, ammonia, sodium chloride, coal, mineral dust, etc.) as well as ozone. Ozone is tramped down when sunlight reacts with pollutants from transportation and industrial drain exhaust. These material can cause respiratory problems, asthma cause, eye inflammation, etc. Some refer to WHO data, ppm of particles lesser than 10 microns (PM10) in the air (PM10). The 10 most smoggy countries in the world, based on counts and other measurements. show. Many are located especially in the Middle East as well as Asia.

2.6. Mongolia

At the peak of about 4,300 feet, the centre of Mangolia as Ulaanbattar, along with the ground of an antique Buddhist lamasery established in 1639. The WHO common soldiery Ulaanbaatar as her alternative is also falls under the category of most populated countries of the world having PM10 of 279, coming from one and the other coal-fired power plants as well as heating along with cooking stoves in the city's Pao district. doing. occurs. The economy is growing thanks to coal as well as Copper mines, and large number of new coal-fired Energy plants are actuality built with "newer and cleaner" technology, but government board say they will be completed outside of Ulaanbaatar. It has also conveyed interest in wind farms and wind turbines. [25]

2.7. Iran

Four Iranian cities are among the 10 most smoggy cities in the world, according to the WHO. Ahvaz, one of the largest in the country, is cited as the time of the year with the most smog. The capital of Khuzestan the city of Ahvaz which is located in the South Wester region of Iran and its history meets wth an ancient city of SUSA which was in Persian Empite. Now, Ahvaz have an average PM10 level of 372, result of the unhindered development of heavy industries such as steel mills, steel mills and oil drilling. Summer temperatures average between 50 and 55 degrees Celsius. [26]

2.8. Pakistan

In Pakistan the Quetta is categorized as fourth most populated country according to the report published by WHO, whereas another city Peshawar which is situated in Pakistan Afghanistan Border is ranked as seventh, this is due to excessive load of Traffic and Brick Plants, which were running across these cities, other cities include Lahore, Islamabad and Karachi is also listed in most 15 populated countries, the increase in industrial activities as well as transportation is major source which contribute in these ranking, the PM10 of Peshawar is 219 , which is alarming situation. [27]

2.9. India

There are over 4 million vehicles registered in Delhi, India's capital, many of which run on diesel fuel. This is one of the reasons why it ranks 12th among the highest polluted countries of the world with a PM10 levels of 198. It is also observed that Lucknow has 186 and Kolkata has 148 PM10, the reason of smog and pollution is also same as Pakistan, as numerous power plants are coming into being.

3. Saudi Arabia

Riyadh is considered to be 23rd most populated city of the world according to the report by WHO , , this country has crowned in producing the oil and basic revenue generated through is from the same, and due to same reason the smog and air pollutant is extremely high, Saudi the PM10 level of Riyadh is 157, but on the other side country officials state the reason of Pollutant is to severe weather.

3.1. Botswana

Gaborone, the capital of Botswana, is listed by WHO which is also the eighth most populated city of the world, with a PM10 level of 216. One reason for this is the rapid growth in vehicle use. Another is to use firewood, animal dung Paraffin is used to make fire for domestic and other purpose. Dakar, which is the capital of Senegal, ranks 28th having a PM10 level of 156, on the other hand Lagos, the capital of Nigeria, is ranked as 46th with a PM10 level of 122.

3.6. Research Findings & Remedies

In Pakistan, awareness about the environmental issues, its concerns and effects are very rare. People do not much adhere or even have concern with the environmental problems at all and many consider it as natural phenomena. The need is felt to give awareness to the journal public that smog in Punjab areas is not the *natural phenomena*, human actions are responsible to aggravate the situation by many ways. The air pollution, IUU urban sprawl, industries & use of coal as a fuel by industries, burning of trash in open areas, excessive use of motor vehicles particularly of old vintage, change of climates and the most important is *violation of environmental laws* are the main reasons of smog in big cities of Punjab areas of Pakistan. The smog depletes the ozone layer as well as vulnerability for the ozone injury partial by many environmental and plants growth factors. The smog also becomes cause of multiple diseases for human beings like cancer, asthma, throat & skin

disease and heat problems. The smog also becomes cause of many road accidents and demise of many precious lives. As per WHO reports released on 25 March 2014 at Geneva that only in 2012 around 7 million people died which becomes 1/8th of total global deaths due to exposure of air pollution. In another report, “*nearly 1.4 million deaths a year, China has the most air pollution fatalities, followed by India with 645,000 and Pakistan with 110,000*”. Pakistan's Environmental Protection Agency has said that the majority of people should only worry when the ozen level is high, you sould contanstantly cheack the ozone lever when you were in travel or on vacation, the same has also be verified by the aviation authorties in Specific areas which could also be help ful to conquer the effect of smog. The AQI index which was developed by the Pak-EPA which assure the ar quality.

This paper focuses on his NO_x, SO_x, CO, and particulate matter (PM) projections for the 21st century and provides an update on the impact of climate change on air quality. Results from a variety of approaches have examined this issue, as well as observed correlations between NO_x, SO_x, CO, in addition to PM and meteorological variable. Ambient air pollution is a health hazard and a global problem, with persistent negative effects even at relatively low concentrations of air pollutants. Cardiovascular disease is caused by multiple factors, including age, physical inactivity, family history, smoking, obesity, hypertension, high cholesterol, and non healthy diet. Air pollution is another major contributor to chronic heart and lung disease. A comparative analysis of data on climate, air pollution, and respiratory disease presented in Table 4 of this research paper demonstrates the differences between climatic zones, air pollution, and outbreaks of respiratory disease at different locations in large cities. It shows important features of interactions and correlations. According to the results of this study, PM10 is the most important component of regional air pollution. Prevention is possible by addressing risk factors for cardiovascular disease, such as: Reducing behavioral and physical habits, anxiety and psychological stress, and other environmental ailments. The study also concludes that polluted industrial environments have serious effects on workers' health. Physical factors such as chemical pollution, noise pollution, air pollution, poor working conditions, extreme heat, night shifts, long working hours and manual labor are related to workers' health and are major causes of illness. It is Excessive heat is known to affect workers' health and lead to many illnesses. The damage caused by poor air quality is not limited to public health, erosion of nitrate-sulphuric heritage, natural resources and agriculture are also severely affected. A comprehensive action plan is needed to address worsening pollution not only in Lahore, but across the country where NGOs and the media have to play a central role. These precautions help protect people from high concentrations of ozone.

Pakistan's Environmental Protection Agency says that most of the people have to worry when the ozone level and ar poluutant is high. No matter where you travel on vacation, you should check your ozone levels. National, state, and local aviation authorities have the tools to research ozone levels in specific areas as well as understand the adverse health effects of smog. Pak-EPA has also developed an index called the Air Quality Index (AQI) that reflects levels of ozone and other pollutants at the national level.

This whitepaper focuses on his NO_x, SO_x, CO, and particulate matter (PM) projections for the 21st century and provides an up-to-date overview of the impact of climate change on air quality. Results from a variety of approaches have examined this issue, including the observed correlations between NO_x, SO_x, CO, PM and meteorological variables. Air pollution is a health hazard and a global problem with persistent negative effects

even at relatively low concentrations of air pollutants. Cardiovascular disease is caused by multiple factors, including family history, age, obesity, physical inactivity, smoking, high cholesterol, hypertension, and unhealthy diet. Air pollution is another important factor in persistent heart and lung disease. A relative analysis of the weather, air contamination, and respiratory disease data presented in Table 4 of this research paper demonstrated differences in climate zones, air pollution, and incidence of respiratory disease at different locations in major cities. is showing. It shows important features of interactions and correlations. As per the research the PM10 is the most important compnet to redress the air pollutant and that could be a major risk for cardiac arrest in the country such as:

Reducing behavioral and physical habits, anxiety, psychological stress, and other environmental ailments. The study also concludes that polluted industrial environments have serious effects on workers' health. Physical factors such as noise pollution, chemical pollution, poor working conditions, air pollution, night shifts, extreme heat, working hours as well as manual labor related to workers' health are also as major causes of illness. It is Excessive heat is known to affect workers' health and lead to many illnesses. Poor Air quality can seriously effect the human health, erosion of nitrate and sulfur heritage, natural resources and agriculture are also severely affected. A comprehensive action plan is needed to tackle the growing Poloution in various part of the country including Lahore and others. These precautions help protect people from high levels of ozone.

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