

Introduction: ranked amongst the top 10 worst

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INTRODUCTION: Smog is a type of air pollution which is becoming a serious hazard now. Smog consists of smoke and fog. The two types of smog include industrial and photochemical smog.

Photochemical smog was first described in the 1950s. Photochemical smog is a combination of air pollutants which have been chemically altered into further toxic compounds by exposure to sunlight. **FORMATION:** Smog begins with certain primary pollutants which include nitrogen oxides reacting with trace hydroxyl radicals and hydrocarbons. Photochemical smog formation involves a sequence of reactions, all of which contains a free radical mechanism. Some of the irritants present in photochemical smog include alkyl nitrite; peroxyacetyl nitrate; nitrous acid; nitric acid, ammonium nitrate etc. **EFFECTS:** Smog consists of substances which are very chemically reactive and cause irritation to humans and other living things. They smell bad, destroy substances, cause respiratory problems and infections, and irritate the eyes and other mucous membranes.

CASE STUDY 1 PHOTOCHEMICAL SMOG IN LAHORE Photochemical smog is at present one of the burning issues around the globe and is becoming a serious hazard. Pakistan is also one of those countries in which air pollution is high and some of its parts also experience the problem of photochemical smog. Lahore; an important city of Pakistan is experiencing this serious issue of smog for the past five years: in 2014 and is ranked amongst the top 10 worst cities for smog according to a Deutsche Welle report.

REASONS OF FORMATION: Lahore is a semi-industrial city and it contains many small and large-scale industrial units. According to World

Bank study from November 2005 to January 2006, numerous contributing reasons were responsible for the high particulate matter in their such as coal combustion (13pc), secondary particulate matter (30pc), exhaust from two-stroke vehicles (8pc), diesel emissions (28 per cent), biomass burning (15pc), and industrial sources (6pc). The biggest contributors were diesel and emissions from motorcycles and rickshaws which are responsible for 36pc of the high particulate matter.

Even though a large component of the carbon containing aerosols in Lahore originated from fossil fuel combustion, a major part was resulting from biomass burning. According to Dr. Adil Najam who holds the position of Dean in the Pardee School of Global Studies at Boston University: "This is much more a case of pollution. We have had a double whammy because pollution, especially from vehicles, has gone up while trees and vegetation have steadily gone down. What we are seeing is the combined effect of these two dynamics coupled with the weather pattern," he points out. EFFECTS ON EVERYDAY LIFE: Heavy smog causes devastating effect on daily life.

It causes traffic to a halt on motorways in the early office hours and after sunset due to dangerously low visibility. Risk of accidents has been increased. People suffers from eye-irritation, coughing and asthma.

CONTROL MEASURES THAT GOVERNMENT NEEDS TO TAKE:

Undertaking pollution caused by vehicle is really a big task for authorities.

The number of vehicles in Pakistan has increased from almost two million to 10.6mn over the last 20 years. The number of motorcycles and scooters increased more than 450pc, and motor cars nearly 650pc. Industrial sites and

factories such as brick kilns and steel mills situated within city boundaries are also a causative factor.

The government can pursue assistance from the courts for a solution.

Activities like open-field burning of rice straw across the border in the Indian Punjab region which increased smog in Lahore as reported by NASA were also observed. Ahmed Rafay Alam, an environmental lawyer states that Pakistan can hold India answerable for the current smog but only if the government can prove its neighboring country is blamable. "If we can prove that crop burning in India has exacerbated smog on the Pakistani side, then under International Environmental Law, India can be made liable to prevent this from happening again. But without adequate testing equipment, we can't be sure and no policy can be set." RECOMMENDATIONS TO OVERCOME THIS PROBLEM: For solutions to the current smog, the Lahore administration can take a good e.

g. from its neighboring country. When New Delhi faced poor air quality the Air Quality Index value reached 999 on the index (any value above 300+ is considered 'hazardous') due to unconstrained crop burning and the use of firecrackers during Diwali; the local administration in New Delhi took instant actions such as schools were closed to prevent children from being exposed to toxic air, the coal Thermal Power plant was shut down, all construction and destruction work was banned and burning trash at landfill sites was prohibited. Administration of Lahore can also follow these steps. Other long-standing solutions can be installing air quality observing devices at various locations in the city, moving heavy pollution causing industries outside the city boundaries, implanting trees, sufficient public transport and

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sustainable management of agricultural waste deposit can prove long-term solutions to smog. CONCLUSION: If the authorities continue to oversee this situation, Lahore might face same consequences as did London.

The Great Smog of London 1952 also known as The Big Smoke; when the city underwent five days of smog which caused deaths of 4,000 people (number of fatalities could have been as great as 12,000 according to upgraded figures) and 100,000 were hospitalized. Hence, this is the time we should realize that there is a dire need to overcome this and other environmental pollutions or else we shall soon be facing serious consequences. CASE STUDY 2 INDONESIA PHOTOCHEMICAL CASE STUDY CAUSES: Indonesia is also one of those unfortunate countries which face many serious problems due to air pollution including photochemical smog. According to reports on 28th of December 2015, around 19 people had died. All of the victims were from Sumatra and Kalimantan, regions where farmers lit fire and carried other activities to clear land rapidly and economically. Fires were burnt at 1,143 hot spots along the Sumatran coast. Pollution levels varied between harmful and adequate in Riau province on Sumatra Island.

EFFECTS ON POPULATION: Air quality table readings have been as high as 983 in the area (anything over 200 being unhealthy). More than half a million Indonesians are suffering from respiratory diseases due to the smog, mostly caused by the fires. People face difficulties in doing everyday activities such as travelling. STEPS TAKEN BY AUTHORITIES: The Indonesian navy evacuated children and other defenseless inhabitants of haze-hit areas but the evacuations will not be helpful if authorities failed to provide care for those suffering from respiratory ailments. The photochemical smog outburst was <https://assignbuster.com/introduction-ranked-amongst-the-top-10-worst/>

the worst ever, worsened by exceptionally dry conditions caused by the El Niño weather phenomenon. The particles in the pollution greatly enhance the risk of cardiovascular and respiratory diseases and cancer and greater than three million people die prematurely each year from prolonged exposure to air pollution.

To tackle with the situation President Joko Widodo suspended a visit to America to return home and go on a tour of the worst-hit areas of the country. The government had to spend a great amount of money and time to extinguish the fires to stop the smog. Seven officials from companies suspected to be behind the fires were arrested. 10 billion rupiah can be fined to a company if found guilty of burning land, and management faces up to 10 years in jail.

CONCLUSION: The above case study clearly indicates the serious consequences and harms that result from air pollution. In order to avoid these problems control measures should be taken at an international level as well as state level such as avoiding the activities that can lead to smog formation for the betterment of our earth.