

Impact of Festivals and Funerals on Ecosystem



Ajay Kumar

Assistant Professor,
Deptt. of Political Science,
Ramanujan College,
Kalkaji, New Delhi

Abstract

Climate refers to the average weather and represents the state of the climate system over a given time period. Due to natural variability and human interventions, there is increase in the emission of the greenhouse gases reflecting variation of the mean state of weather variables including temperature, precipitation and wind. Green house gases are more important for their ability to trap heat from the sun and create atmosphere that supports the life on Earth. However increasing levels of these gases is the cause of global temperatures, resulting in the most severe ecological crisis that earth has witnessed in the whole of human history. The effect of heat trapping due to the increasing presence of these gases is understood as greenhouse effect, which causes global warming and subsequent result of warming is known as climate change. Man and environment are inter-related. The environment influences the life of human beings and also human beings modify their environment as a result of their growth, dispersal, activities, death and decay etc. Indian festivals & Hindu cremation system are one of them. They are also a part of Indian culture. But simultaneously they are working as a danger which somehow fostering the global warming and climate change in India with human cultural activities.

Keywords: Green House Gases, Global Warming, Ecosystem, Festivals, Carbon Dioxide, Cultural Activities, Carbon Emissions, Pollution, Bonfire, Environment.

Introduction

Firstly the term ecosystem was coined by Arthur George Tansley in 1935. For Tansley, "An ecosystem is a community of living organisms in conjunction with the nonliving components of their environment, interacting as a system."¹ It may be said that living organisms of a community not only having relationship among themselves but they have also functional relationship with the non-living environment. Thus, ecosystem is the basic structural and functional component of ecology. There are many definitions for ecosystem. The definition of Christopherson (1997) seems quite workable, but so are quite a few others. An ecosystem is a natural system consisting of all plants, animals and micro-organisms (biotic factors) in an area functioning together with all the non-living physical (abiotic) factors of the environment.²

Man and environment both are too interactive. The environment always has an impression on the life of human being likewise human beings transfigure their environment as outcome of their growth, dispersal, activities, death and decay etc. Thus all human beings including man (as society) and environment are interdependent. During the various phases of human civilization many social structure were developed like industrial, agricultural, religious and aesthetic structure. The structures reveal that human being accumulated the resource from the natural environment. So here we would like to take cultural factor of the human being that impact on the environment and our ecosystem as well, is too dangerous.³

In India, there is unity and integrity in its immense diversity. Diversity is up to such extent that it is hard to prepare a list of the people belonging to different religion, religious sects, regional languages, traditional practices, food preferences, dresses, dances etc. However, it is a great wonder that an inherent unity and integrity in its strongest form exists in every part of the country that can only be reflected when the people of India celebrates functions or assembles for a genuine cause both during war and for peace. One section of society has sacred regard for the faiths and beliefs of other section of society and cooperate each other during social functions, marriages, religious celebrations, and even during hard times of each other. When unity of India or its integrity among vast

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diversity is a subject of our talk, we cannot leave our Hindu festivals and funerals system alone.

It is considered that India is a country of festivals. According to Wikipedia, India celebrates 151 festivals in a year. In the Vedic/Hindu tradition, there are many festivals that are observed throughout the year. There are major festivals and numerous minor ones, as well as those that are celebrated on a local or regional basis, which are celebrated differently according to the location, or even named differently. There are different festivals to celebrate the various incarnations of God, as well as those that honor the seasons, harvests, relationships, and certain principles of the Vedic culture. Some of the major festivals are listed and described as follows: *Makara Sankranti, Vasant Panchami, Maha Shivaratri, Holi, Gaura Purnima, Shri Rama Navami, Ugadi and Vishu, Hanuman Jayanthi, Guru Purnima, Raksha Bandan, Onam, Krishna Janmashtami, Ganesh Chaturthi, Navaratri, Dusshera, Karva Chauth, and Deepavali.*

Objective of the Study

Aim of writing this research paper is to throw the light on the relations of man and environment. The environment influences the life of human beings and also human beings modify their environment as a result of their growth, dispersal, activities, death and decay etc. This paper tries to seek the reasons that how some major festivals and cremation system (funerals) are as one factor which fostering the global warming and climate change in India with human cultural activities. Moreover, this paper also seeks some eco-friendly remedies to the festivals and funerals' hazards.

Review of Literature

Chandra Venkataraman, Trupti Mishra and Subimal Ghosh edited a book titled *Climate Change Signals and Response: A Strategic Knowledge Compendium for India* (2018), in this book they provides a synthesis of research extracts, in the special context of India about strategic knowledge outcomes regarding emergence of recent regional climate signals, implications for impacts assessment, and mitigation and adaptation response, which relevant in the present. The main part of the book tells us the evidence of climate change and its underlying scientific processes across India; it is mainly focusing on impacts that are already visible and attributable to anthropogenic activities.

W. Neil Adger, Jon Barnett, Katrina Brown, Nadine Marshall and Karen O'Brien Suggested in their research article titled 'Cultural dimensions of climate change impacts and adaptation' published in *Nature Climate Change* (2013) that Society's response to every dimension of global climate change is mediated by culture. Culture is important for understanding both mitigation of and adaptation to climate change, and of course plays its part in framing climate change as a phenomenon of concern to society. Culture is embedded in the dominant modes of production, consumption, lifestyles and social organization that give rise to emissions of greenhouse gases. Cultures are dynamic and reflexive and so are in turn shaped by the idea of climate change. Hence culture, and its analysis, is central to understanding

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the causes and meaning of, and human responses to climate change.

Siddharth Singh suggested in his book *The Great Smog of India* (2018) that air pollution kills over a million Indians every year, albeit silently. Families are thrown into a spiralling cycle of hospital visits, critically poor health and financial trouble impacting their productivity and ability to participate in the economy. He discusses not only developments in sectors like transport, industry and energy production that silently contribute to air pollution, but also the 'agricultural shock' to air quality triggered by crop burning in northern India every winter. He places the air pollution crisis in the context of India's meteorological conditions and also climate change.

Victor Mallet discussed in his book *River of Life, River of Death: The Ganges and India's Future* (2017) that Ganga river the waterway that has nourished more people than any on earth for three millennia is now so polluted with sewage and toxic waste that it has become a menace to human and animal health. India is killing the Ganges and the Ganges in turn is killing India. Mallet delves into the religious, historical and biological mysteries of the Ganges and explains how Hindus can simultaneously revere and abuse their national river.

Festivals: An affair of Enjoyment, Peace and Delight

Normally, festivals are one kind of celebration by which we remember the events that took place on that particular day. Different people of the different religion, race, caste and creed have different festivals and they have their different reasons to celebrate them. In other words, *Festival is an auspicious day or period of religious or other celebration prevalent in all societies and religious communities.* Festivals are an important part of our life. Most of the festivals in India are associated with religion. The Hindus are worshipers of many deities and naturally Hindu festivals are many.

For instance, Diwali is a very popular festival among Hindus and is celebrated in India and neighbor countries with great joy on the 13th day of dark fortnight of the month of Ashvin. It remarks the return of Lord Ram along with wife Sita and brother Laxman after 14 long years of exile. Diwali remarks the victory of lord Ram on *Rakshash king Ravana*. On this day, people decorate their homes with Diyas and lights. Goddess Laxmi is worshiped to seek money and prosperity. People send gifts and sweets to their near and dear ones. The festival totally symbolizes a victory of good over evil. The day is celebrated on a large scale in India as well as in its neighbor countries.

Holi is known as festival of colours. It is celebrated at the end of winter season every year which usually falls in later part of February or start of the March. In most of the regions Holi lasts for two days. On first day participants hold bonfire which is called as "*Holika Dahan*" and on second day people throw coloured powder at each other and celebrate wildly is called as *Dhulivandan* (Dulhandi) or *Rangpanchami*. People also cook Puran-Poli and sweets at home and invite their relatives and friends

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for celebrations. The day is celebrated on a large scale in India as well as in neighbor countries. The festival of Holi has been reported to be celebrated in many countries of the world including USA, South Africa and U.K. as Indians have migrated everywhere in the world. However, foreign people who like some of the Indian traditions and culture take keen interests and enjoy with Indians in their festivals.

In theory, Ganesh Chaturthi is a beautiful festival. Like many Hindu festivals, its exact origins are unknown. We know that it has been celebrated in private homes for centuries, and that in 1893, freedom fighter Bal Gangadhar Tilak gave it an unprecedented public face. Tilak specifically began installing large images of Ganesh in various pavilions around Pune city, in an effort to subvert the British ruling that prevented Indians from freely gathering. Since then, the festival has grown phenomenally around western India and, to some extent, globally.

Vijayadasami, also known as Dussehra, is a major Hindu festival celebrated at the end of Navratri every year. It is observed for different reasons and celebrated differently in various parts of the Indian subcontinent. Largely, the day is celebrated to commemorate the prevalence of good over evil. The day is celebrated on a large scale in India as well as in Bangladesh and Nepal also.

Another Festival is Lohri. Though popular belief has it that Lohri is celebrated to mark the end of peak winter, this festival is traditionally associated with the harvest of the *Rabi crops*. The traditional time to harvest sugarcane crops is January; therefore, Lohri is seen by some to be a harvest festival. And thus, Punjabi farmers see the day after Lohri (Maghi) as *the financial New Year*. Although Lohri is the festival of Sikh community but Sikh religion is also an offspring of Hindu religion. The annual harvest festival of Lohri is celebrated in several parts of north India. Punjab, Haryana, Delhi and some parts of Himachal Pradesh celebrate Lohri with much enthusiasm. It is also celebrated in Britain and Canada because of Sikh migrants.

Social and Cultural Value of Festivals

In this context, festivals of India have a great religious and social importance. Festivals guide the people to unite them and instruct a moral lesson as well. In festive season people lose their all differences and celebrate these festivals with a sense of togetherness. Festivals teach all the people that they lose their bitterness and enmity and unite with each other for sake of their religion and their society and for the purpose of friendship and universal brotherhood.⁴

Negative aspects of Celebration of Festivals

As coin has two sides as our festivals also have two aspects—one is positive and another is negative. As negative aspect of Diwali are firecrackers. Diwali is a holy festival that brings joy, peace and happiness. It is a festival of lights, not of fumes and firecrackers. But we play it in the wrong way. Just to celebrate happiness, we burn thousand crores of rupees that bring devastating results as sound and air pollution.

Report says, One Diwali night pollutes a city as much as it gets polluted in whole year. By bursting

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crackers, we are emitting poisonous gasses like SO₂ (Sulphur dioxide), CO₂ (Carbon dioxide) and CO (carbon monoxide) and eventually we will be inhaling these gasses which will cause serious disease and problems to our health. Even the firecracker-garbage contains toxic chemicals like phosphorous and ammonium nitrate. These fire-crackers also produce immense sounds causing sound pollution. Apart of that, the loud sound is not good for newly born babies and old people. Whereas a normal human being can hear sounds between 0 and 140 decibels.

India burns more than 600 crore rupees every year on Diwali. It adds 4000 metric ton garbage in Delhi and 8000 metric tons in Mumbai only. In Bangalore, garbage collection is increased by 800 to 1000 tons during these times whereas Chennai produces 50 tons more of this garbage. More than 10,000 people get injured because of firecrackers. One Diwali night causes as much damage to the ecology as regular pollution does over the span of a year.

As the world is getting more & more educated & civilized, we're doing more & more meaningless & uncivilized works. Today, using cracker is becoming a fashion. Millions are spent on this worthless garbage stuff. Bursting crackers is turning to a competition & a status indicator. Many people feel proud to show off their wealth by investing thousands or even lakhs on this non-sense stuff.

One of the major concerns of a developing nation like us is environmental pollution. On Diwali, pollution just shoots up like a rocket (it goes up by 30%). It is estimated that for every hour of fireworks display, the compound 'strontium' increases by 120 times (in small amounts it is harmless but in larger amounts it causes damage to bones and can cause blood clotting disorders) in the air. Not only that, but magnesium also increases by 22 times, barium by 12 times, potassium by 11 times and copper by six times. Firecrackers also contain traces of heavy metals that are toxic to the human body. Additionally, at this time when issues of climate change and global warming are being presented with a sense of urgency, we need to be concerned about the number of greenhouse gases fireworks produce, which includes Carbon dioxide (CO₂) and ozone.

Also the noise pollution it creates cannot be overlooked, fireworks can create 140 decibels of noise (noise at 85 decibels or above can damage hearing). Diwali is a nightmare for dogs and other animals who get scared of loud sounds (dogs can hear 4 times more than us, imagine the pain and agony).

At New Year eve and Diwali, we are all witness to see a firework display, explosions and multicolored light's showers. As atmospheric scientists have demonstrated, fireworks leave their mark on air quality for some time after the bangs and glows have passed. Apart from this Indian weddings are also celebrated as festival with lots of firecrackers. Number of Indian marriages in a year: Approx 1,00, 00,000. Therefore, Ban on crackers in

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Delhi, including marriages etc, other than religious functions was occurred.

On this occasion, huge amount firecrackers are burnt. These firecrackers when burnt can release various gases like Sulphur dioxide (SO₂) and nitrogen dioxide (NO₂), air pollutants such as SPM (Suspended particulate matter), PM10, PM2.5

Pollutants (Average concentration for 24 hrs.)

	Carbon Monoxide (CO) (in mg/m ³)	Oxides of Nitrogen (NO ₂) (in mg/m ³)	Sulphur Dioxide (SO ₂) (in µg/m ³)	Particulate Matter- PM ₁₀ (in µg/m ³)	Particulate Matter- PM _{2.5} (in µg/m ³)
Diwali 2016	2.0—4.2	70.0-123.0	20.0-131.0	448—939	180—440
Diwali 2015	1.1—4.0	37.0—79.0	26—64	296—778	184—369

Source: Air Quality Monitoring Data assessed by Central Pollution Control Board, 2016.

Sulphur Dioxide (SO₂) is readily soluble and dissolves in the larger airways of respiratory system. At higher concentrations severe contraction restricts the breathing process. SO₂ adversely affects plant growth and productivity by interaction with different physiological processes. Nitrogen dioxide causes respiratory allergies and also Cause throat and chest congestion. Suspended particulate matter (SPM) level goes up during Diwali making the air unhealthy to

(particulate matter) , oxides of carbon (CO and CO₂) and toxic metals like Ba (*Barium*), Cu (Copper), Cd (Cadmium) , Pb (Lead), Hg (Mercury), Al (Aluminum) to significant quantity and degrades the air quality. We can see the average concentration for 24 hours after Diwali in the year 2015 and 2016.

breathe. The increase in level of SPM in the air causes eye, throat and nose problems. The particulate matter may contain some heavy metal, oxide/salts, which get deposited in the lungs causing irreversible damage. Concentration of carbon dioxide (CO₂) increased in the environment due to burning of firecrackers that causes of global warming. Figure shows how firecrackers hurt our health.

How Firecrackers Hurt Your Health

Toxin	Colour Display	Hazards
Aluminium	Brilliant White	Skin allergy; lung Irritation
Arsenic Sulfide	Colorant	Lung cancer, Skin Irritation, Warts
Antimony Sulfide	Glitter effect	Carcinogen
Barium nitrate	Glittering greens	Airway Irritation
Copper	Blue colour	Cancer risk
Hexachlorobenzene	Intensifies co	Cancer, reproductive hazard
Lead	Oxidises	Neurotoxin, foetal and brain retardation
Strontium Compunds	Red colour	Replace calcium in the body, weaken bones
Ammonium & Potassium perchlorate	Propellant	Thyroid disorders
Potassium Nitrate	Black Powder	Carcinogenic, toxic dust

Source: Data is taken from Perfect Pollucon Services, 25 October, 2014

The Ministry of Environment and Forests and the Central Pollution Control Board (CPCB) have framed rules and regulations on the use of loudspeakers and have also banned the manufacture, sale and bursting of fireworks generating noise level exceeding 125 dB(AI) or 145 dB(C)pk at 4 metres distance from the point of bursting. In absence of public awareness and strict implementation of the rules, the desired result has yet to be achieved. The environmental impact of festivals further increases if you add the carbon footprint of power generation, which is additionally needed to light up celebration venues, houses and commercial centers during these festivals.⁵

As per tradition, in celebration of Holika Dahan i.e. huge bonfire which contribute to deforestation. During Holi festival CO₂, CO, Particulate matter levels go high which causes poor air quality. Also on this auspicious day participants also burst fireworks which release harmful gases and toxic substances into the air which can be measured by air quality monitoring. The traditional '*Holika Dahan*' is believed to contribute to deforestation and air pollution.

Many thinkers believed that Water pollution is one of the major effects of Holi Festival. Most of the

cities in India, recently, are meeting to the water scarcity. Even then people know the scarcity of water, they play Holy by water filled buckets and throw water buckets to each other; children also throw water balloons on each other. They do this activity deliberately. Apart from this, Drainage system can be blocked by the plastic bags and balloons. In recent study it is found that all types of chemically prepared colours are harmful to our health. It may contain Lead oxide, copper sulphate, Aluminium Bromide, Prussian blue, Mercury Sulphide etc. Many colours cause Asthma, skin irritation, rashes, swelling, allergy and it affects the eyes.

National Biodiversity Strategy and Action Plan's recent study represented that chemical colors overtook India's wonderful vegetable dyes. However colors provide delightful enjoyment to our sight but they may act as serious pollutants when their base is dyes and dyestuffs. Likewise, as dry colors (gulals) were found very dangerous, toxic with heavy metals, this may cause asthma, skin disease and temporary blindness.⁶ They reported that the wet colors might lead to skin discoloration and dermatitis and are also carcinogenic in nature. Lack of control over the quality and content of these colors is a problem, as they are frequently sold by vendors who do not know their

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origin. The large variety of dyes and chemicals used in an attempt to make more attractive and popular dyes for a competitive market render them very complex. In India, these colors are prepared on a small scale and lack any quality checks. Use of such toxic colors should be discouraged, and all doctors should caution people against using synthetic dyes. There is an urgent need to put manufacturing of 'Holi' colors under guidelines of the Food and Drug Cosmetic Act and the Bureau of Indian Standards.⁷

Effects of Common Holi Colors on Human Health

Colors	Chemicals	Health Effects
Red	Mercury Sulphite	Highly toxic can cause skin cancer
Green	Copper Sulphate	Eye Allergy, Puffiness and temporary blindness
Silver	Aluminium Bromide	Carcinogenic
Blue	Prussian Blue	Contact Dermatitis
Black	Lead oxide	Renal Failure

Source: Atmospheric Environment, No.45 (2011), 3640-3644

The traditional '*Holika Dahan*' bonfire is believed to contribute to deforestation and air pollution. Approximately 30,000 Holi fires are lit across a state in India. And considering that 100 kg of wood go up in flames in each bonfire, the final figure touches a mindboggling 30, 00,000 kg of wood and, in the process, taking toll of over 7,500 trees.⁸ It means that 840,000 Holi fires are lit all over India. it needs 840,000,00 Kg of wood, and in the process, taking toll of over 210,000 trees which is a major loss and that contribute in a huge amount in deforestation and air pollution. "Despite increasing awareness about the environment, cutting of trees during Holi is rampant," Environmentalists have questioned the practise but failed to check it as the state government has not shown any interest in taking action against mindless damage to trees.⁹

There is also concern about the large scale wastage of water and water-pollution due to synthetic colors during '*Holi*' celebration. Their presence in water, even at very low concentrations, is highly visible and undesirable. When these colored effluents enter rivers or any surface water system they upset biological activity. Ground-water systems are also affected by these pollutants because of leaching from the soil.

The discharge of the toxic colors in the soil and water has a deleterious effect on the water resources, soil fertility, micro-organisms living in these habitats and the ecosystem integrity on the whole. These colors are not readily degradable under natural conditions and are typically not removed from waste water by conventional waste water treatments. Thus, several bacteria have been found to decolorize, transform and completely mineralize colored soil and water in both aerobic and anaerobic conditions. During the last decade, environmental issues associated with the dyestuff production and applications have grown significantly.

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Lohri is considered as a sister of Holika. The history of this festival can be traced in the era of Akbar. As per legends, during the rule of Akbar, a Muslim robber named Dulla Batti was there. He would steal from the rich people distribute the loot among the poor people like Robin Hood. He helped the girls who were being taken away against their wish. Dulla Batti had progressive thinking so he would arrange inter-caste marriages between Muslim Girls and Hindu boys. Because of this quality in Dulla Batti, people of Punjab respected him and sang songs in his admiration to express their obligation. During this festival, to remember Dulla Batti, people still sing songs to celebrate this festival¹⁰.

The bonfire is also arranged after sunset as a symbol of God-Sun. It is believed that sun is the major source of all living beings on the earth and represents both kind of energy like physical and spiritual energy in living being. For the newly-wed and new born babies, lohri is very crucial. During the celebration people throw til, puffed rice and popcorn into the flame of the bonfire. The people pray and offer to the bonfire to seek prosperity and luxuriance. Apart from this, Punjabi people fix marriages by traditional dancing and singing. Bonfire night is a "cataclysmic disaster" for the environment. The National Society for Clean Air said carbon monoxide, dioxins and particles were released into the atmosphere by bonfires, adding to background air pollution that is causing of global warming.¹¹

Apart from this, the idols of Lord Ganesh, and Maa Durga etc. are worshipped with all rituals by Hindu are immersed in water bodies in the months of September and October respectively every year on the occasion of Ganesh Chaturthi and Vijaydashmi. The time span of festival may vary from one and half day to ten days. When these idols are immersed in water bodies then it create water pollution, and affect the quality of water. During the worship, public also uses of loudspeaker, D.J. and firecracker to enjoy, these all thing create noise pollution.

Idols are made of many types of materials like Plaster of Paris (PoP), wood, bamboo, jute, grass, and clay. To make these idols decorative and attractive they are painted with bright synthetic colour or lead oxide (Sindoor-orange color) mixed with oils which contain large amount of heavy metals. These chemical paints make the film on the water surface and prevent the entry of oxygen into the water.¹² So Dissolved oxygen (D.O.) level will be decrease. Due to this fishes, aquatic plant will be affected. The main pollution is caused by the Plaster of Paris (PoP) idols. PoP is a compound of gypsum, sulphur, phosphorus and magnesium. Chemical paints contain toxic compounds, including mercury, cadmium, lead and carbon. Immersion of idols with such poisonous and toxic elements raises the level of acidity, solid matter, organic matter and heavy metals in water bodies. These materials don't dissolve readily. On the contrary, they silt the water bodies and lower the oxygen level in water, adversely affecting the aquatic life.

In 2010, the Central Pollution Control Board (CPCB) framed the guidelines for immersion of idols,

offerings and other worship materials reaching in the water bodies during festival. The guidelines emphasize the use of natural materials in *pooja* as stated in the old religious scripts. The CPCB

guidelines include immersion guidelines for local bodies/ authorities and also define the role of state pollution control boards.¹³

SWOT Analysis of Festivals

Strength	Weakness	Opportunities	Threats
Increment the relations among the individuals	Commotion contamination achieves it crest amid celebrations like Diwali, Holi, Ganesh Chaturthi and so forth. The streets are spoilt by shade papers, blooms, nourishment and other material strewn everywhere.	May improve local economy.	May have environmental impact: several kinds of pollutions create by the festivals celebration. Air, Water, waste disposal, Radioactive/ chemical contamination also a matter of sorrow.
Build social relations and social correspondence which prompts solidarity among the individuals.	Tremendous parades held amid celebration seasons add to road turned parking lot issues. Ganesh Chaturthi makes water tainting while inundation.	Create an opportunity to the people of community to share their feeling and exchange their ideas and thoughts. Additional help to discuss their problems also.	Harmful gases create global warming that will cause a climate change. Acid Rain, Deforestation, Ozone depletion and Bio-diversity damage will also be concerning issues.
If we consider the families, they assemble and have a great time with all the relatives who are an incredible mental unwinding and advance family relations.	Music may be tranquil and symphonious to ears yet abundance of anything would harm.	It likewise helps us in saving our society and legacy.	It will create health problem to the people of the country like Heat stress, Cardiovascular failure, Asthma, Respiratory Allergies, Malaria, Chickungunia, Dengue and Stress.
The present generation know about our customs and practices during these celebrations.	Mostly people die in the crowd mob and by accidents during festivals.	It will save our civilization for a long time and Mobilizing social and economic life	Present and Future generation will be affected by the lots of dangerous diseases and migration also by the local and global climate change.

Funerals are a Huge Problem to the Environment

One more problem is Hindu funerals. More than seven million Hindus die each year in India and the sight of corpses surrendering to the flames of traditional funeral pyres is part of the country's daily cycle of life. Fifty to 60 million trees are burnt during cremations every year in India, according to *Mokshda*, a Delhi-based NGO working to reduce the environmental impact of funeral pyres. Air pollution and deforestation are not the only environmental threats caused by cremation: They also generate large quantities of ash, which are later thrown into rivers, adding to the toxicity of their waters. In order to tackle the environmental problems stemming from these sites, the Indian government and environmental groups have, over the years, promoted the use of electric systems as an alternate way of cremation. The main problem with cremation is that "all the ashes go into the rivers and carbon dioxide is creating global warming." Indeed, out of the 10 million people or so who die each year in India, close to 85% of the population practice cremation, according to the latest UN statistics. This results in the cutting down of an estimated 50 million trees and the production of approximately 8 million tons of carbon dioxide each year.¹⁴

Mokshda, however, claims it has created an alternative system that addresses these problems: It says its affordable, energy-efficient "Green Cremation System" generates minimum air and water pollution, while taking into consideration the religious needs of Hindus.¹⁵

A traditional Hindu funeral pyre burns anything between 500 to 600 kilograms of wood and takes over six hours. This implies that an estimated 50 to 60 million trees are cut and burnt annually in India for cremations — that is millions of tonnes of carbon dioxide or greenhouse gas emissions.¹⁶ As per the journal *Nature*, more than three million people across the world die prematurely because of outdoor pollution; China and India lead this pack.¹⁷

On the other hand Muslims funeral are good in comparison of Hindu funerals. Burial is pretty much the standard way that most humans have been burying each other since a long period. As the body decomposes, it can release nutrients to the soil. This is the opinion of experts regarding burial who concluded that the burial method is suitable for the environment and nature.

The Hindu cremation results in many serious disadvantages on the environment and causes pollution of air. Also, burning a dead body needs a large amount of wood that leads to cutting forests and

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trees that contributes to air pollution. Also, the Hindu way of burning is an expensive one and unaffordable for the poor people, contrary to the way of Islamic burial that is cheap and best.

The city Varanasi is on the banks of the Ganges River, which is holy to the Hindus. According to the Hindu religion, it recommended to burn the dead body in the fire which is called *Mukti* "Salvation". Both Varanasi city and the River Ganges are sacred in Hinduism. Therefore, they try to get the body burnt there on the bank of the river.

That is why a complete facility for the burning of dead bodies has been made available in Varanasi on the bank of the river. There are many open crematoriums prepared for this purpose. Cremation ghat's fire is lit ceaselessly over the whole year. An average of 300 dead bodies is burnt every day.

Actually Hindus believe that if a person wants to be rewarded paradise and salvaged from hellfire then he should die in Varanasi. Therefore, many guardians go to Varanasi with their beloved one who is close to death to achieve salvation.¹⁸

Hindu scriptures never announced that burning the dead bodies is more environment-friendly; rather they announce fire liberates the soul, but Hindus having a misconception that burning the dead-bodies is a best way for decomposing the same, whereas burning dead bodies hurt people with its nasty smell and smoke abducting from the corpse fire.¹⁹ Apart from this, burning the dead bodies cause water-pollution across the Ganga River. Thus, in the name of salvation the burning of dead bodies is polluting the environment through its smoke, smell and dangerous ashes.

Festivals/Funerals' impact on Ecosystem

Scientists have concluded that most of the observed warming is very likely due to the burning of coal, oil, trees and gas. This conclusion is based on a detailed understanding of the atmospheric greenhouse effect and how human activities have been tweaking it. At the same time, other reasonable explanations, most notably changes in the Sun, have been ruled out.

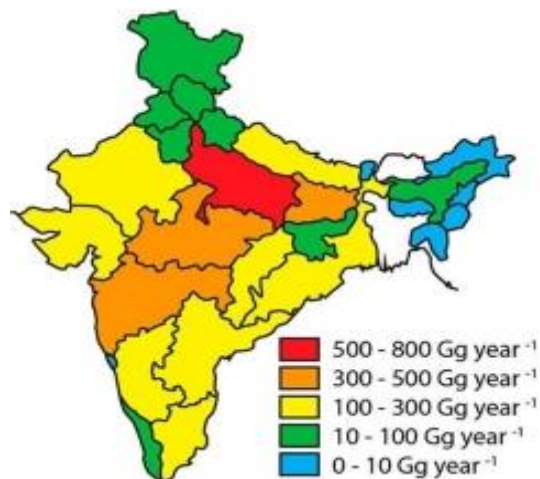
The atmospheric greenhouse effect naturally keeps our planet warm enough to be livable. Sunlight passes through the atmosphere. Light-colored surfaces, such as clouds or ice caps, radiate some heat back into space. But most of the incoming heat warms the planet's surface. The Earth then radiates some heat back into the atmosphere. Some of that heat is trapped by greenhouse gases in the atmosphere, including carbon dioxide (CO₂).

Human activity--such as burning fossil fuels--causes more greenhouse gases to build up in the atmosphere. As the atmosphere "thickens" with more greenhouse gases, more heat is held in. Fossil fuels such as oil, coal and natural gas are high in carbon and, when burned, produce major amounts of carbon dioxide (CO₂).

The role of atmospheric carbon dioxide (CO₂) in warming the Earth's surface was first demonstrated by Swedish scientist Svante Arrhenius more than 100 years ago. Scientific data have since established that, for hundreds of thousands of years,

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changes in temperature have closely tracked with atmospheric CO₂ concentrations. Since the Industrial Revolution, the burning of coal, oil and natural gas has emitted roughly 500 billion tons of CO₂, about half of which remains in the atmosphere. This CO₂ is the biggest factor responsible for recent warming trends.²⁰ In India, the amount of wood and other bio-fuels burned per year for funeral pyres is greatest in the northern Indo-Gangetic Plain region (red) and in the central and western Indian states (orange). (We can see CO₂ emission in Giga gram per year)



Source: Environ. Sci. Technol. Lett. And Chemical & Engineering News, October 11, 2013

Burning wood, fossil fuels, and other kinds of organic matter releases tiny, carbon-rich particles that absorb solar radiation and help retain heat in the atmosphere. These carbon aerosols are the second largest human-made contributor to global warming after carbon dioxide. And when the particles fall onto snow and ice, their dark color causes the ice to absorb more sunlight, speeding up melting of glaciers.

In addition, Deforestation can have a negative impact on the environment. The most dramatic impact is a loss of habitat for millions of species. Eighty percent of Earth's land animals and plants live in forests, and many cannot survive the deforestation that destroys their homes. Deforestation also drives climate change.

Pollutants like oil, detergents, nitrogen and phosphate from fertilizers and lead can have a tremendous impact on the ecosystem, especially if the water gets polluted. In a lake, for example, it can wreak havoc on the ecological balance by stimulating plant growth and causing the death of fish due to suffocation resulting from lack of oxygen. The oxygen cycle will stop, and the polluted water will also affect the animals dependant on the lake water. The main problem caused by water pollution is that it kills life that depends on these water bodies. Dead fish, crabs, birds and sea gulls, dolphins, and many other animals often wind up on beaches, killed by pollutants in their habitat (living environment).²¹

Chemicals such as lead and cadmium reach to the animals, as pollutants these are eaten by tiny animals. Thereafter, these animals are consumed by water bodies like fish and shellfish and at the higher

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scale the food chain continues to be disrupted. Eventually, human beings are much affected by this kind of process as well. This kind of seafood provides some diseases to man like hepatitis. Thus, pollution disrupts the natural food chain as well. By water pollution ecosystems can be destroyed. Now many places are being affected by the careless human pollution, while this pollution is coming back to hurt human beings.²²

The climate system is defined by the dynamics and interactions of its five major components i.e. atmosphere (air), Hydrosphere (liquid water), cryosphere (frozen water), Geosphere (Land surface) and Biosphere (Life). Though, celebrating festivals is the matter of religion and a matter of emotions as well but if we celebrate our festivals on the cost of climate and we contribute in spoiling the environment. Because it creates global warming and climate change. Global warming is reflecting our seasons—in resulting—short and dry winter and long and hot summers damage our crops and our food supply because it will also reflect our ponds and rivers also. Thus, this phenomenon creates a serious threat to the human being.

Conclusion

It is very bad thing that we are not fully aware of this that pollution may damage our ecosystem. Rather our political leaders are also not too aware fully as well. On the one side they provide massage on Diwali that do not use firecrackers on the eve of Diwali because it may pollute the environment. But on the other side, they promote religion based festivals through burning the firecrackers on the fests. Significantly, it is noticed that Prime minister burns the statues (*effigy*) of Ravana, Meghnad and Kumbhakarana in Ramlila Maidan Delhi that have lot of fireworks in itself. Likewise the peoples of this nation use LPG at home to cook with and CNG in their vehicle to drive with but on the festivals they are going mad with the religious celebrations and does spoils our ecosystem by burning firecrackers on the fests. Thus they are also responsible to damage our ecosystem.

With festivals come environmental perils. Surveys by government and nongovernment agencies point out significant increase in water, air and noise pollution during and just after festivals. Though some environmentally conscious individuals and organizations now practise and promote eco-friendly celebrations, much more awareness and action is needed. The celebrations should not harm, hurt or disturb patients, children and our ecology.

The Eco-Friendly Methods to Celebrate Festivals

Some following steps can be counted to celebrate the festivals as eco-friendly:

Eco-friendly Idols

We should not buy chemical colored painted idols and those that having non-degradable material as thermocol and plastic-made. Metal, stone or unbaked clay idols may be used in worshipping because they are environment-friendly. Rather we can use symbolic idols of clay or mud at our home. We can use turmeric, chandan, kesar, kumkum etc. to color them.

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Eco-friendly Decoration

To avoid the plastic-made flowers and decoration material, we should decorate the festival venue with biodegradable materials like cloth, paper flowers, decorative plants and leave, bamboo, etc. We can make rangoli with the turmeric, mehandi, gulaal or rice powder and meal atta.

Eco-friendly Immersion

You can worship with the metal or stone idols. Thereafter you may immerse small clay idols in a big water vessel at home symbolically, when clay mixes with water give it to plants as fertilized soil.

Use Eco-friendly Colors

Firstly avoid using chemical colors and aluminum paint on Holi. We can prepare the natural color from tree and leaves. Kesu flowers may be used. Turmeric, mehandi, rice –powder may be used during the Holi celebration. Because chemical colors may hurt your skin and they are more dangerous to the environment as well. It can be dangerous for water cycle.

Eco-friendly Bonfire

Holika Dahan this not only leads to the cutting of trees but also unnecessary pollution in return. To avoid this harmful management you may use the waste material in holika Dahan, and try to manage with small holika as symbolically. By this activity we can save the trees and environment as well.

Save Electricity

To save the electricity we should switch on decorative lights when necessary and use only CFL and LED lamps since they save more energy in comparison of normal bulbs or lights.

Cut Noise Pollution

Avoid using fireworks since firecrackers make noise and smoke. Loudspeakers should be strictly prohibited. If it is necessary then loudspeaker should be played between a given times.

Avoid Plastic Material

Say no to plastic bags to carry Prasad or Sweets on festivals, paper bags should use in large scale. Tree leaves-made plates should be used in distributing Prasad. Use recycled paper sheets and boxes for packing gifts.²³

Remedies for Cremation

Electric Cremation

The concept of electric cremation is not new but it is unpopular. It was started in January 1989 as a part of the Ganga Action Plan. River friendly cremation was the objective of this plan. To tackle the river pollution electric cremations were set up in all over the country. But before the Hindu rituals this kind of cremation has been unpopular as Hindus still do not want to shed away their traditional belief. Electric cremations have also failed not only due to religious factors but also due to technical snags and lack of finances in maintenance in India. But this kind of cremation not only saving trees and water but saving the environment. We should avoid those rituals that may hurt ecosystem since religious custom of Hindu are based on myths.

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Green Cremation System

Alternate method of cremation at Ganga River is green cremation system which Hindu can follow up, but it is also unpopular in India. Green cremation is a quiet process that uses water and potassium hydroxide to reduce the dead body to its basic element of bone ash. The ashes are then returned to the family. It essentially accelerates the natural process to around 2 hours in a very unruffled, controlled environment. This system has been developed by a NGO in Delhi in 1992 but even then it has not been popularized.²⁴

Remember 3 Rs

Practise the principle of Reduce, Re-use and Re-cycle to cut down on the amount of wastes produced during festivals and funeral as well. Take care of Mother Earth and celebrate life.

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