Environmental Management - The Double Edged Sword: A Perspective

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Abstract

Incessant floods and deluge, sudden droughts, tsunami, continuously warming up of the weather, asthma, allergy, breathlessness, time and again, remind of severe problems taking place in our environment.

Air pollution and water pollution have kept on baffling us over a period of time since long ages. Initially the advanced countries went for uncontrolled industrialisation ignoring their aftermath on the environment. Dangerous gases mounted up in the environment increasing the pollution in air as well as in water. Not only was it in CO_2 and CO mounting up to the above dangerous level but slowly and steadily, damaging the ozone layer too thereby, permitting the ultraviolet rays to reach to the human civilization. Afterwards, the underdeveloped nations have also been following the same path of industrialisation, thereby, adding up to the already preserved prolonged diseases of environment.

The developed countries blame developing nations for the pollution issues and greenhouse effect. And the underdeveloped countries cross blame the developed ones for the same. Overall, the environmental issues have come up as the most important issues for the survival of the mankind if the suitable step is not taken to preserve the climate and the environment. Government and the industries have to join hands to combat this menace.

This paper proposes to discuss the reasons for the environmental problems and the possible solutions to combat them specially global warming and the climate change.

1. INTRODUCTION

If the first priority of the mankind is to be decided as on date, it shall surely be the environment and the climate protection in the unison. The environment constitutes of everything in the universe in which the man kind exists. All kind of pollutions in the environment era on the rise so is the air pollution. In fact, very recently during the Diwali season only the micro particles in the environment mounted to the tune of as much as 40 times as the daily normal average. A day after Diwali the the levels of particular matter (pm) 10 and 2.5 in Delhi were recorded at severe levels of 836.1 ug/me (over eight times the safe limits) and 624.2ug/me nearly 10 times the safe limit, according to system of air quality and weather forecasting and research of union ministry of earth sciences.

Global warming and climate change are terms for the observed century-scale rise in the average temperature of the Earth climate and its related effects. Multiple lines of scientific evidence show that the climate system is warming Although the increase of near-surface atmospheric temperature is the measure of global warming often reported in the popular press, most of the additional energy stored in the climate system since 1970 has gone into the oceans. The rest has melted ice and warmed the continents and atmosphere. Many of the observed changes since the 1950s are unprecedented over tens to thousands of years.

Human-made CO2 continues to increase above levels not seen in hundreds of thousands of years. Methane and other, often much more potent, greenhouse gasses are also rising along with CO2. Currently, about half of the carbon dioxide released from the burning of fossil fuels remains in the atmosphere. The rest is absorbed by vegetation and the oceans. climate model projections summarized in the report indicated that during the 21st century the global surface temperature is likely to rise a further 0.3 to 1.7 °C (0.5 to 3.1 °F) for their lowest emissions scenario and 2.6 to 4.8 °C (4.7 to 8.6 °F) for the highest emissions .These findings have been recognized by the national science academies of the major industrialized nations and are not disputed by any scientific body of national or international standing.

Future climate change and associated impacts will differ from region to region around the globe Anticipated effects include warming global temperature rising sea levels, and expansion of deserts in the subtropics. Warming is expected to be greater over land than over the oceans and greatest in the artic. with the continuing retreat of glaciers, permafrost and sea ice. other likely changes include more frequent extreme weather events including heat waves, droughts, heavy rainfall with floods and heavy snowfall; ocean acidification; and species extinctions due to shifting temperature regimes. Effects significant to humans include the threat to food security from decreasing crop yields and the abandonment of populated areas due to rising sea levels Because the climate system has a large "inertia" and greenhouse gasses will stay in the atmosphere for a long time, many of these effects will not only exist for decades or centuries, but will persist for tens of thousands of years.

Possible societal responses to global warming include mitigation by emissions reduction, adaptation to its effects, building systems resilient to its effects, and possible future climate engineering. Most countries are parties to the United Nations Framework Convention on Climate Change (UNFCCC) whose ultimate objective is to prevent dangerous anthropogenic climate change. Parties to the UNFCCC have agreed that deep cuts in emissions are required and that global warming should be limited to well below 2.0 °C (3.6 °F) relative to pre-industrial levels, with efforts made to limit warming to 1.5 °C (2.7 °F).

Public reactions to global warming and concern about its effects are also increasing. A global 2015 Pew Research Center report showed a median of 54% consider it "a very serious problem". There are significant regional differences, with Americans and Chinese (whose economies are responsible for the greatest annual CO_2 emissions) among the least concerned.

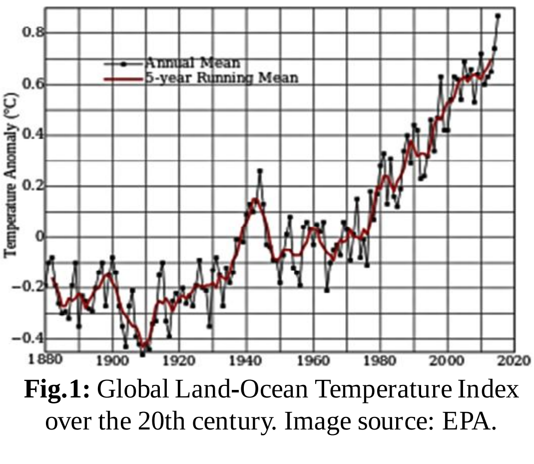

Fig.1: Global Land-Ocean Temperature Index over the 20th century. Image source: EPA.

Global mean surface temperature change from 1880 to 2015, relative to the 1951–1980 mean. The black line is the annual mean and the red line is the 5-year running mean. Source: NASA GISS.

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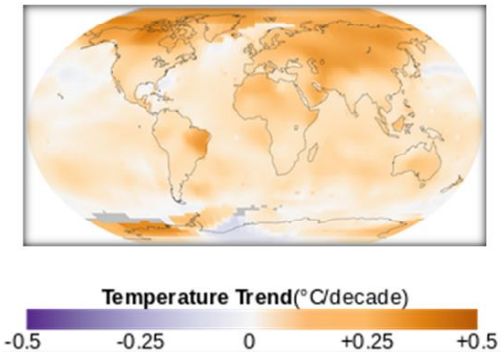

Fig.2: Global Mean Surface Temperature Change

World map showing surface temperature trends (°C per decade) between 1950 and 2014. Source: NASA GISS

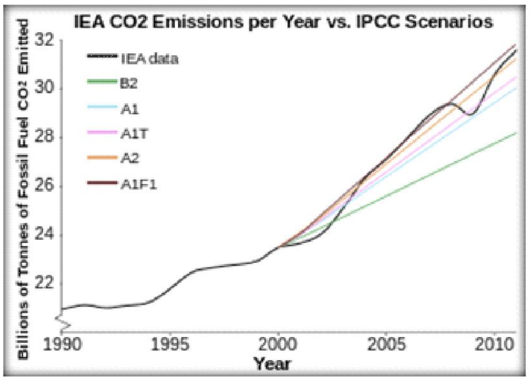

Fig.3: 5 year Comparison of Fossil Fuel Related CO_2 Emissions with IPCC's Emissions

Fossil fuel related CO_2) emissions compared to five of the IPCC's "SRES" emissions scenarios, published in 2000. The dips are related to global recessions. Image source: Skeptical Science.

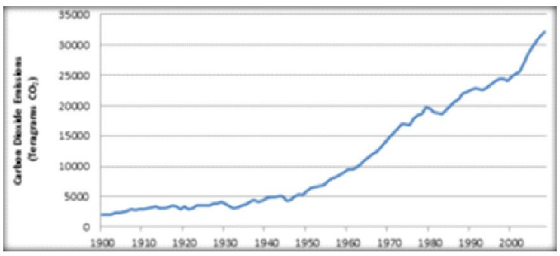

Fig.4: Fossil Fuel Related Carbondixide Emissions Over the 20th Century

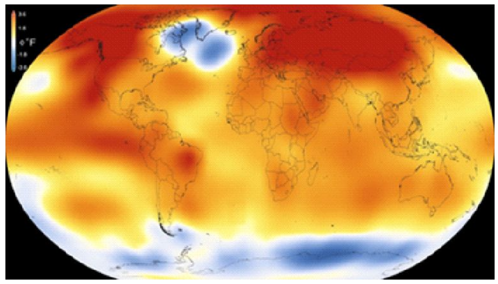

Fig.5: 2015 – Warmest Global Year on Record (since 1880) – Colours indicate temperature anomalies (NASA/NOAA; 20 January 2016).

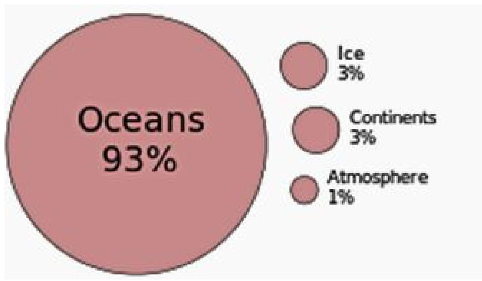

Fig.6: Energy Change Inventory, 1971-2010

Earth has been in *radiative imbalance* since at least the 1970s, where less energy leaves the atmosphere than enters it. Most of this extra energy has been absorbed by the oceans. It is very likely that human activities substantially contributed to this increase.

The global average (land and ocean) surface temperature shows a warming of 0.85 [0.65 to 1.06] °C in the period 1880 to 2012, based on multiple independently produced datasets. Earth's average surface temperature rose by 0.74±0.18 °C over the period 1906–2005. The rate of warming almost doubled for the last half of that period (0.13±0.03 °C per decade, versus 0.07±0.02 °C per decade). The average temperature of the lower troposphere has increased between 0.13 and 0.22 °C (0.23 and 0.40 °F) per decade since 1979, according to satellite temperature measurements. Climate proxies show the temperature to have been relatively stable over the one or two thousand years before 1850, with regionally varying fluctuations such as the Medieval Warm Period and the Little Ice Age. The warming that is evident in the instrumental temperature record is consistent with a wide range of observations, as documented by many independent scientific groups Examples include sea level rise, widespread melting of snow and land ice, increased heat content of the oceans, increased humidity, and the earlier timing of spring events, e.g., the flowering of plants. The probability that these changes could have occurred by chance is virtually zero. orisen considerably faster than models.

2. CLIMATE CHANGE

Climate change is a change in the statistical distribution of weather patterns when that change lasts for an extended period of time (i.e., decades to millions of years). Climate change may refer to a change in average weather conditions, or in the time variation of weather around longer-term average conditions (i.e., more or fewer extreme weather events). Climate change is caused by factors such as biotic processes, variations in solar radiation received by Earth, plate tectonics, and volcanic eruptions. Certain human activities have also been identified as significant causes of recent climate change, often referred to as *global warming*.

Scientists actively work to understand past and future climate by using observations and the oretical models. A climate record—extending deep into the Earth's past—has been assembled, and continues to be built up, based on geological evidence from borehole temperature profiles, cores removed from deep accumulations of ice, floral and faunal records, glacial and per glacial processes, stable-isotope and other analyses of sediment layers, and records of past sea levels. More recent data are provided by the instrumental record. General circulation models, based on the physical sciences, are often used in theoretical approaches to match past climate data, make future projections, and link causes and effects in climate change.

In 1966, the World Meteorological Organization (WMO) proposed the term climatic change to encompass all forms of climatic variability on time-scales longer than 10 years, whether the cause was natural or anthropogenic. Change was a given and climatic was used as an adjective to describe this kind of change (as opposed to political or economic change). When it was realized that human activities had a potential to drastically alter the climate, the term climate change replaced climatic change as the dominant term to reflect an anthropogenic cause. Climate change was incorporated in the title of the Intergovernmental Panel on Climate Change (IPCC) and the UN Framework Convention on Climate Change (UNFCCC). Climate change, used as a noun, became an issue rather than the technical description of changing weather.

On the broadest scale, the rate at which energy is received from the Sun and the rate at which it is lost to space determine the equilibrium temperature and climate of Earth. This energy is distributed around the globe by winds, ocean currents, and other mechanisms to affect the climates of different regions.

Factors that can shape climate are called climate forcing or "forcing mechanisms". These include processes such as variations in solar radiation, variations in the Earth's orbit, variations in the albedo or reflectivity of the continents and oceans, mountain-building and continental drift and changes in greenhouse gas concentrations. There are a variety of climate change feedbacks that can either amplify or diminish the initial forcing. Some parts of the climate system, such as the oceans and ice caps, respond more slowly in reaction to climate forcings, while others respond more quickly. There are also key threshold factors which when exceeded can produce rapid change.

Forcing mechanisms can be either "internal" or "external". Internal forcing mechanisms are natural processes within the climate system itself (e.g., the thermohaline circulation). External forcing mechanisms can be either natural (e.g., changes in solar output) or anthropogenic (e.g., increased emissions of greenhouse gases).

Whether the initial forcing mechanism is internal or external, the response of the climate system might be fast (e.g., a sudden cooling due to airborne volcanic ash reflecting sunlight), slow (e.g. thermal expansion of warming ocean water), or a combination (e.g., sudden loss of albedo in the arctic ocean as sea ice melts, followed by more gradual thermal expansion of the water). Therefore, the climate system can respond abruptly, but the full response to forcing mechanisms might not be fully developed for centuries or even longer.

3. OZONE MANAGEMENT

The *ozone layer* or *ozone shield* is a region of Earth's stratosphere that absorbs most of the Sun's ultraviolet (UV) radiation. It contains high concentrations of ozone (O_3) in relation to other parts of the atmosphere, although still small in relation to other gases in the stratosphere. The ozone layer contains less than 10 parts per million of ozone, while the average ozone concentration in Earth's atmosphere as a whole is about 0.3 parts per million. The ozone layer is mainly found in the lower portion of the stratosphere, from approximately 20 to 30 kilometres (12 to 19 mi) above Earth, although its thickness varies seasonally and geographically.

The ozone layer was discovered in 1913 by the French physicists Charles Fabry and Henri Buisson. Measurements of the sun showed that the radiation sent out from its surface and reaching the ground on Earth is usually consistent with the spectrum of a black body with a temperature in the range of 5,500–6,000 K (5,227 to 5,727 °C), except that there was no radiation below a wavelength of about 310 nm at the ultraviolet end of the spectrum. It was deduced that the missing radiation was being absorbed by something in the atmosphere. Eventually the spectrum of the missing radiation was matched to only one known chemical, ozone. Its properties were explored in detail by the British meteorologist G. M. B. Dobson, who developed a simple spectrophotometer (the Dobsonmeter) that could be used to measure stratospheric ozone from the ground. Between 1928 and 1958, Dobson established a worldwide network of ozone monitoring stations, which continue to operate to this day. The "Dobson unit", a convenient measure of the amount of ozone overhead, is named in his honor.

The ozone layer absorbs 97 to 99 percent of the Sun's medium-frequency ultraviolet light (from about 200 nm to 315 nm wavelength), which otherwise would potentially damage exposed life forms near the surface. The United Nations General Assembly has designated September 16 as the International Day for the Preservation of the Ozone Layer.

The ozone layer can be depleted by free radical catalysts, including nitric oxide (NO), nitrous oxide (N_2O), hydroxyl (OH), atomic chlorine (Cl), and atomic bromine (Br). While there are natural sources for all of these species, the concentrations of chlorine and bromine increased markedly in recent decades because of the release of large quantities of man-made organohalogen compounds, especially chlorofluorocarbons (CFCs) and bromofluorocarbons.

These highly stable compounds are capable of surviving the rise to the stratosphere, where Cl and Br radicals are liberated by the action of ultraviolet light. Each radical is then free to initiate and catalyze a chain reaction capable of breaking down over 100,000 ozone molecules. By 2009, nitrous oxide was the largest ozone-depleting substance (ODS) emitted through human activities.

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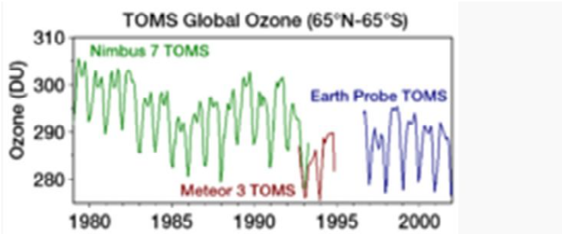

Fig.7: Levels of atmosphereic ozone measured by satellite show clear seasonal variations and appear to verify their decline over time.

The breakdown of ozone in the stratosphere results in reduced absorption of ultraviolet radiation. Consequently, unabsorbed and dangerous ultraviolet radiation is able to reach the Earth's surface at a higher intensity. Ozone levels have dropped by a worldwide average of about 4 percent since the late 1970s. For approximately 5 percent of the Earth's surface, around the north and south poles, much larger seasonal declines have been seen, and are described as "ozone holes".The discovery of the annual depletion of ozone above the Antarctic was first announced by Joe Farman, Brian Gardiner and Jonathan Shanklin, in a paper which appeared in *Nature* on May 16, 1985.

4. ENVIRONMENTAL ISSUES IN INDIA

There are many environmental issues in India. Air pollution, water pollution, garbage, and pollution of the natural environment are all challenges for India. The situation was worse between 1947 through 1995. According to data collection and environment assessment studies of World Bank experts, between 1995 through 2010, India has made one of the fastest progresses in the world, in addressing its environmental issues and improving its environmental quality. Still, India has a long way to go to reach environmental quality similar to those enjoyed in developed economies. Pollution remains a major challenge and opportunity for India. Environmental issues are one of the primary causes of disease, health issues and long term livelihood impact for India.

Some have cited economic development as the cause regarding the environmental issues. It is suggested that India's growing population is the primary cause of India's environmental degradation. Systematic studies challenge this theory. Empirical evidence from countries such as Japan, England and Singapore, each with population density similar or higher than India, yet each enjoying environmental quality vastly superior than India, suggests population density may not be the only factor affecting India's issues.

Fig.8: Flood Affected Area

Floods are a significant environmental issue for India. It causes soil erosion, destruction of wetlands and wide migration of solid wastes. Major environmental issues are forest and agricultural degradation of land, resource depletion (such as water, mineral, forest, sand, and rocks), public health, loss of biodiversity, ecosystems, livelihood security for the poor.The major sources of pollution in India include the rapid burning of fuel wood and biomass such as dried waste from livestock as the primary source of energy, lack of organized garbage and waste removal services, lack of sewage treatment operations, lack of flood control and monsoon water drainage system, diversion of consumer waste into rivers, cremation practices near major rivers, government mandated protection of highly polluting old public transport, and continued operation by Indian government of government owned, high emission plants built between 1950 and 1980.

4.1 Air Pollution

Air pollution, poor management of waste, growing water scarcity, falling groundwater tables, water pollution, preservation and quality of forests, biodiversity loss, and land/soil degradation are some of the major environmental issues India faces today India's population growth adds pressure to environmental issues and its resources. Rapid urbanization has caused a buildup of heavy metals in the soil of the city of Ghaziabad, and these metals are being ingested through contaminated vegetables. Heavy metals are hazardous to people's health and are known carcinogens.

There is a long history of study and debate about the interactions between population growth and the environment. According to a British thinker Malthus, for example, a growing population exerts pressure on agricultural land, causing environmental degradation, and forcing the cultivation of land of poorer as well as poorer quality. This environmental degradation ultimately reduces agricultural yields and food availability, causes famines and diseases and death, thereby reducing the rate of population growth.

Population growth, because it can place increased pressure on the assimilative capacity of the environment, is also seen as a major cause of air, water, and solid-waste pollution. The result, Malthus theorized, is an equilibrium population that enjoys low levels of both income and environmental quality. Malthus suggested positive and preventative forced control of human population, along with abolition of poor law.

More recent scholarly articles concede that whilst there is no question that population growth may contribute to environmental degradation, its effects can be modified by economic growth and modern technology Research in environmental economics has uncovered a relationship between environmental quality, measured by ambient concentrations of air pollutants and per capita income. This so-called environmental Kuznets curve shows environmental quality worsening up until about $5,000 of per capita income on purchasing parity basis, and improving thereafter. The key requirement, for this to be true, is continued adoption of technology and scientific management of resources, continued increases in productivity in every economic sector, entrepreneurial innovation and economic expansion.

Other data suggests that population density has little correlation to environmental quality and human quality of life. India's population density, in 2011, was about 368 human beings per square kilometre. Many countries with population density similar or higher than India enjoy environmental quality as well as human quality of life far superior than India. For example: Singapore (7148 /km^2), Hong Kong (6349 /km^2), South Korea (487 /km^2), Netherlands (403 /km^2), Belgium (355 / km^2), England (395 /km^2) and Japan (337/ km^2).

Fig.9: Rural stove using biomass cakes, fuel wood and trash as cooking fuel

Shown above are a rural stove using biomass cakes, fuel wood and trash as cooking fuel. Surveys suggest over 100 million households in India use such stoves (chullahs) every day, 2–3 times a day. It is a major source of air pollution in India, and produces smoke and numerous indoor air pollutants at concentrations 5 times higher than coal. Clean burning fuels and electricity are unavailable in rural parts and small towns of India because of poor rural highways and limited energy generation infrastructure.

Air pollution in India is a serious issue with the major sources being fuel wood and biomass burning, fuel adulteration, vehicle emission and traffic congestion. Air pollution is also the main cause of the Asian brown cloud, which is causing the monsoon to be delayed. India is the world's largest consumer of fuel wood, agricultural waste and biomass for energy purposes. Traditional fuel (fuel wood, crop residue and dung cake) dominates domestic energy use in rural India and accounts for about 90% of the total. In urban areas, this traditional fuel constitutes about 24% of the total. Fuel wood, agri-waste and biomass cake burning releases over 165 million tonnes of combustion products into India's indoor and outdoor air every year. These biomass-based household stoves in India are also a leading source of greenhouse emissions contributing to climate change

The annual crop burning practice in northwest India, north India and eastern Pakistan, after monsoons, from October to December, are a major seasonal source of air pollution. Approximately 500 million tons of crop residues is burnt in open, releasing smoke, soot, NOx, SOx, PAHs and particulate matter into the air. This burning has been found to be a leading cause of smog and haze problems through the winter over Punjab, cities such as Delhi, and major population centers along the rivers through West Bengal. In other states of India, rice straw and other crop residue burning in open is a major source of air pollution.

Vehicle emissions are another source of air pollution. Vehicle emissions are worsened by fuel adulteration and poor fuel combustion efficiencies from traffic congestion and low density of quality, high speed road network per 1000 people.

On per capita basis, India is a small emitter of carbon dioxide greenhouse. In 2009, IEA estimates that it emitted about 1.4 tons of gas per person, in comparison to the United States' 17 tons per person, and a world average of 5.3 tons per person. However, India was the third largest emitter of total carbon dioxide in 2009 at 1.65 Gt per year, after China (6.9 Gt per year) and the United States (5.2 Gt per year). With 17 percent of world population, India contributed some 5 percent of human-sourced carbon dioxide emission; compared to China's 24 percent share.

The Air (Prevention and Control of Pollution) Act was passed in 1981 to regulate air pollution and there have been some measurable improvements However, the 2012 Environmental Performance Index ranked India as having the poorest relative air quality out of 132 countries.

4.2 Water Pollution

There is a large gap between generation and treatment of domestic waste water in India. The problem is not only that India lacks sufficient treatment capacity but also that the sewage treatment plants that exist do not operate and are not maintained The majority of the government-owned sewage treatment plants remain closed most of the time due to improper design or poor maintenance or lack of reliable electricity supply to operate the plants, together with absentee employees and poor management. The waste water generated in these areas normally percolates in the soil or evaporates. The uncollected wastes accumulate in the urban areas cause unhygienic conditions and release pollutants that leach to surface and groundwater.

According to a World Health Organization study out of India's 3,119 towns and cities, just 209 have partial sewage treatment facilities, and only 8 have full wastewater treatment facilities. Over 100 Indian cities dump untreated sewage directly into the Ganges River Investment is needed to bridge the gap between 29000 million litre per day of sewage India generates, and a treatment capacity of mere 6000 million litre per day.

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Other sources of water pollution include agriculture run off and small scale factories along the rivers and lakes of India. Fertilizers and pesticides used in agriculture in northwest have been found in rivers, lakes and ground water Flooding during monsoons worsens India's water pollution problem, as it washes and moves all sorts of solid garbage and contaminated soils into its rivers and wetlands.

According to NASA groundwater declines are highest on Earth between 2002 and 2008 in northern India. Agricultural productivity is dependent on irrigation. A collapse of agricultural output and severe shortages of potable water may influence 114 million residents in India. In July 2012, about 670 million people or 10% of the world's population lost power blame on the severe drought restricting the power delivered by hydroelectric dams.

Fig.10: Trash & Garbage Disposals

4.3 Solid Waste Pollution

Trash and garbage disposal services, responsibility of local government workers in India, are ineffective. Solid waste is routinely seen along India's streets and shopping plazas. Trash and garbage is a common sight in urban and rural areas of India. It is a major source of pollution. Indian cities alone generate more than 100 million tons of solid waste a year. Street corners are piled with trash. Public places and sidewalks are despoiled with filth and litter, rivers and canals act as garbage dumps. In part, India's garbage crisis is from rising consumption. India's waste problem also points to a stunning failure of governance.

In 2000, India's Supreme Court directed all Indian cities to implement a comprehensive waste-management programme that would include household collection of segregated waste, recycling and composting. These directions have simply been ignored. No major city runs a comprehensive programme of the kind envisioned by the Supreme Court.

Indeed, forget waste segregation and recycling directive of the India's Supreme Court, the Organisation for Economic Cooperation and Development estimates that up to 40 percent of municipal waste in India remains simply uncollected. Even medical waste, theoretically controlled by stringent rules that require hospitals to operate incinerators, is routinely dumped with regular municipal garbage. A recent study found that about half of India's medical waste is improperly disposed of.

Municipalities in Indian cities and towns have waste collection employees. However, these are unionized government workers and their work performance is neither measured nor monitored. Some of the few solid waste landfills India has, near its major cities, are overflowing and poorly managed. They have become significant sources of greenhouse emissions and breeding sites for disease vectors such as flies, mosquitoes, cockroaches, rats, and other pests.

In 2011, several Indian cities embarked on waste-to-energy projects of the type in use in Germany, Switzerland and Japan For example, New Delhi is implementing two incinerator projects aimed at turning the city's trash problem into electricity resource. These plants are being welcomed for addressing the city's chronic problems of excess untreated waste and a shortage of electric power. They are also being welcomed by those who seek to prevent water pollution, hygiene problems, and eliminate rotting trash that produces potent greenhouse gas methane. The projects are being opposed by waste collection workers and local unions who fear changing technology may deprive them of their livelihood and way of life.

Along with waste-to-energy projects, some cities and towns such as Pune, Maharashtra is introducing competition and the privatization of solid waste collection, street cleaning operations and bio-mining to dispose the waste. A scientific study suggests public private partnership is, in Indian context, more useful in solid waste management. According to this study, government and municipal corporations must encourage PPP-based local management through collection, transport and segregation and disposal of solid waste.

4.4 Noise Pollution

Noise pollution or noise disturbance is the disturbing or excessive noise that may harm the activity or balance of human or animal life. Noise-wise India can be termed as the most polluted country in the world.[42] The source of most outdoor noise worldwide is mainly caused by machines and transportation systems, motor vehicles, aircraft, and trains In India the outdoor noise is also caused by loud music during festival seasons. Outdoor noise is summarized by the word environmental noise. Poor urban planning may give rise to noise pollution, since side-by-side industrial and residential buildings can result in noise pollution in the residential areas.

Indoor noise can be caused by machines, building activities, and music performances, especially in some workplaces. Noise-induced hearing loss can be caused by outside (e.g. trains) or inside (e.g. music) noise.

High noise levels can contribute to cardiovascular effects in humans and an increased incidence of coronary artery disease. In animals, noise can increase the risk of death by altering predator or prey detection and avoidance, interfere with reproduction and navigation, and contribute to permanent hearing loss.

The Supreme Court of India which is in New Delhi gave a significant verdict on noise pollution in 2005 Unnecessary honking of vehicles makes for a high decibel level of noise in cities. The use of loudspeakers for political purposes and for sermons by temples and mosques makes noise pollution in residential areas worse. In January 2010, Government of India published norms of permissible noise levels in urban and rural areas.

4.5 Land or Soil pollution

In March 2009, the issue of Uranium poisoning in Punjab attracted press coverage. It was alleged to be caused by fly ash ponds of thermal power stations, which reportedly lead to severe birth defects in children in the Faridkot and Bhatinda districts of Punjab. The news reports claimed the uranium levels were more than 60 times the maximum safe limit. In 2012, the Government of India confirmed that the ground water in Malwa belt of Punjab has uranium metal that is 50% above the trace limits set by the United Nations' World Health Organization. Scientific studies, based on over 1000 samples from various sampling points, could not trace the source to fly ash and any sources from thermal power plants or industry as originally alleged. The study also revealed that the uranium concentration in ground water of Malwa district is not 60 times the WHO limits, but only 50% above the WHO limit in 3 locations. This highest concentration found in samples was less than those found naturally in ground waters currently used for human purposes elsewhere, such as Finland. Research is underway to identify natural or other sources for the uranium.

5. CONCLUSION

To combat the environment problems, govt. is trying to bring about various positive changes.

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'Namami Gange' is one such programme to cleanse the polluted Ganges River. All the governments for the last 30 years are finding it extremely tough to clean Ganges on accounts of many unmanageable factors like falling sewage water among many factors. Inter-linking of rivers ia another such step. Rain water harvesting is gaining momentum on all the fronts. The corporate are taking environment issues on priority specially two wheelers and four wheeler manufactures incorporating global environmental norms. Wind energy, and nuclear energy sort of alternative means are gaining momentum. Finally all the countries are recognizing the critical requirement of managing environments on all the fronts.

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