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From The Desk of the Editor-in-chief...

Search for mythical River Saraswati to keep soul alive

सरस्वत्यभि नो नेषि वस्यो माप स्फरीः पयसा मा न आ धक्
जुषस्व नः सख्या वेश्या च मा त्वत्क्षेत्राण्यरणानि गन्म

"Please do not deny us your water, O Maa Sarasvati! Please do not spurn us, leaving us to travel to other lands distant from you!" Rig Veda (RV, Mandala 6, Sukta 61, Verse 14)

The Sarasvati is the river of consciousness which enlivens creation, dawn-goddess whose rays dispel the darkness of ignorance. It is revered and mounted upon a pedestal and is also considered to exist in a metaphysical form, in which it formed a confluence with the sacred rivers Ganges and Yamuna, at the Triveni Sangam. The river is adored in the Rigveda as: *ambitame, naditame, devitame.* (Best of mother, best of rivers and best of Goddesses).

Attempts to rediscover the river were started in the 19th century and have been ongoing since then. Intense investigations have yielded fruitful data obtained through ground and satellite based techniques as well as from palaeoseismic, and palaeoclimatic records. The historical Ghaggar-Hakra river, identified with the Sarasvati, flowed down the present Ghaggar-Hakra River channel, and that of the Nara in Sindh. Satellite images in possession of the ISRO and ONGC have confirmed that the major course of a river ran through the present-day Ghaggar River.

In 2016, a committee constituted by Government of India constituted on Palaeochannels of North-West India: Review and Assessment, concluded that Saraswati river had two branches eastern & western. The eastern branch included Sarsuti-Markanda rivulets in Haryana and the western branches included Ghaggar-Patiali channels. The committee considers that branches met near Patiala, at Shatrana, then flowed as a large river.

This re-discovery will surely help mankind and environment as rivers are essential part of ecosystem and provide food, energy, recreation, water for irrigation and for drinking. It is the most essential element and the single most important commodity in our lives.

Without river, life wouldn't be possible.

May the river Saraswati re-attain her lost glory and find its true place in the History of our ancient land…To realize her one must go beyond the pleasures of the senses and rejoice in the serenity of the spirit.

Happy Reading

Dr. Sanjeev Bansal
Editor-In-Chief
Amity Journal of Energy & Environment Studies

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Disposing and Recycling of Electronic Wastes (E-Wastes) through Green Computing

Arpit*

The paper talks about the Green Computing as the future of computing in the 21st century and a way to control electronic wastes (E-waste) so as to conserve the environment. E-waste is defined as "the waste electrical and electronic equipment, whole or in part or rejects from their repair and manufacturing process, which are intended to be discarded". Green Computing is the study of designing, manufacturing/engineering, using and disposing of computing devices in a way that reduces their environmental impact. Today, many organizations use the Green Computing Lifecycle when designing and implementing green computing technologies. Many governmental agencies have continued to implement standards and regulations that encourage green computing.

In India, the e-waste management is in a state of concern throughout the country. It has now become the fifth largest producer of e-waste in 2016 behind the United States, Japan, China and Germany.

This paper also talks about the survey that is conducted showing the awareness of green computing among the general public in Delhi NCR region. Also, the perception of the people towards educating not only the children but also the waste collectors about the hazards of not disposing e-waste is also studied.

Keywords: Green Computing, E-waste, Hazardous Components, Waste Electrical and Electronic Equipment (WEEE), Ministry of Environment and Forest (MoEF), Recycle, Reduce, Reuse.

INTRODUCTION

E-waste or electronic waste has been defined as "the waste electronic and electrical equipment, whole or in part or rejects from their repair and manufacturing process, that are intended to be discarded" while electronic and electrical equipment are defined as 'the equipment which is dependent on electro-magnetic fields or electrical currents to be fully functional'.Today, most of the developing countries are suffering with the problem of rapidly increasing e-waste and they have to have new and effective e-waste management systems for the end of the life Information and Communication Technology (ICT) products to avoid the threat on the environment and the mankind.

International Telecommunication Union (ITU) has accepted the fact that the regulations in many developing countries to cover the areas of Waste Electrical and Electronic Equipment (WEEE) are inadequate as they exclude key topics and key stakeholders like the informal sector. The collection, recycling, recovery and associated activities of e-waste management by the informal sector having little or no knowledge about techniques, precautions etc., cause more damage to their health and environment.

Green computing is defined as the environment friendly and environmentally responsible use of computers (desktops and laptops) and their resources. In larger aspects, it is also defined as the study of designing, manufacturing or engineering, using and disposing of computing devices in a way that minimizes their environmental impact.

Green computing focuses to accomplish economic viability and enhance the way computing devices are utilized. Green IT practices include the enhanced disposal and recycling procedures and development of environmentally sustainable production practices and energy efficient computers. The primary aim of such a program is to account for the "triple bottom line" (Planet, Profit, People), an extended spectrum of values and criteria for measuring societal and organizational success. The other objectives are as same as that of green chemistry; which is trying to maximize energy efficiency during the product's lifetime, promote recyclability or biodegradability of products and factory waste and decrease the use of dangerous materials. Hence, a green computing initiative program should be systemic in nature and address progressively sophisticated problems. The elements of such a solution may comprise items like

* *Executive Tata Technologies Ltd.*

management restructuring, disposal of e-waste, regulatory compliance, end user satisfaction, telecommuting.

INDIAN SCENARIO OF E-WASTE MANAGEMENT

In last few years, India has emerged as one major IT hub and the consumer electronic market has grown in an exponential rate. According to Manufacturers Association of Information Technology (MAIT) the Indian PC industry is growing by 25% compound annual growth rate. Study reports that in 2007, 2.2 million computers were made obsolete and 14 million mobile handsets replaced. The e-waste generated was estimated to be 332,979 tonnes out of which 144,000 tonnes was recyclable and actually e-waste recycled was 19,000 tonnes. The e-waste processed contained 7000 tonnes of TV and 12000 tonnes of computers. It was also estimated that around 50,000 tonnes of e-waste was generated through import besides 332,000 tonnes generated domestically.

According to a study conducted in 2016, though India has become the second largest mobile market with 1.03 billion subscribers, but it is also the fifth largest producer of e-waste in the world after the United States, Japan, China and Germany. The country discards roughly 18.5 lac metric tonnes of e-waste each year with 12% of the total e-waste generated being telecom equipment alone.

Developed countries find it profitable to send e-waste for reuse/ recycling to developing nations because of economic disparities e.g. cost of recycling of a computer in US is $20 whereas in India it is $2. So, the import of e-waste to India has got enough chance to jump high. In India, there are around 10 states that contribute to 70% of the total electronic waste generated in the country, whereas approximately 65 cities generate more than 60% of the total electronic waste.

IINITIATIVES TAKEN BY LEADING CORPORATES IN INDIA

HCL Info systems Limited, India's premier information enabler and country's leading ICT system integrator and Distribution Company, today commenced its 'Green Bag' Campaign. The Campaign will cover 99 'HCL Touch' centers across major metros and mini-metros in India. HCL will be enabling its 'HCL Touch' centers across the country, to accept e-waste under the 'Green-Bag' Campaign under its 'EcoSafe' environmental initiative. The campaign, will encourage people to dispose-off their end of life IT equipment including computers, keyboard, scanner, printers etc. in an environmental friendly way. The EcoSafe initiative aims to create awareness on environmental issues and educate customers to responsibly dispose their e-waste. HCL has also tied up with leading electronic waste collection and recycling service providers in India.

To promote recycling of e-waste, Nokia India launched a 'Take Back' campaign where customers can drop their old mobile phone in the company's stores and win gifts. The take-back campaign is focused at educating mobile phone users on the importance of recycling electronic waste. As a part of this initiative, Nokia encourages the users to dispose their used handsets and accessories such as handsets and charges, regardless of the brand, at any of the recycling bins set up across Nokia Priority Dealers and Nokia Care Centers.

Figure 1 : Nokia Take Back Initiative Ad of Recycling of E-Waste

Samsung Electronics also started with an initiative called STAR (Samsung Takeback And Recycling) program to encourage recycling of e-waste. This program recycles several electronic items like laptops, refrigerators, televisions, mobiles, washing machine, etc. that are no longer useful. 'Samsung Take-back And Recycling' (STAR) program is an initiative towards leading a more conscious life and making an awareness towards conservation and optimization of resources.

Figure 2: Samsung's Initiative of Recycling E-waste

This program also tells the consumer and the general public where to recycle the e-waste depending on the location of the consumer anywhere in India. Samsung Electronics strictly adheres to the Management and Handling Rules, 2011 notified by the Ministry of Environment and Forest (MoEF).

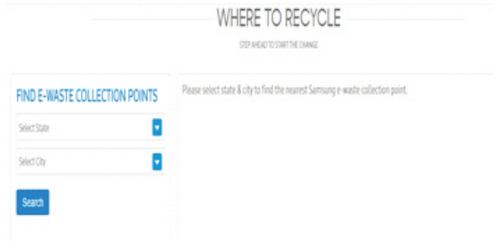

Figure 3: Samsung's Provision of telling people Where to Recycle E-waste

ADVANTAGES OF GREEN COMPUTING

- Conserving resources means less energy is required to produce, use, and dispose of products.
- Green computing even includes changing government policy to motivate recycling and lowering the use of energy by individuals and businesses.
- Reduced energy usage from green computing techniques converts into lower carbon dioxide emissions, originating from a reduction in the fossil fuel used in power plants and transportation.
- Reduce the risk existing in the laptops such as chemical known to cause cancer, nerve damage and immune reactions in humans.
- Saving energy and resources saves money.
- Individual Green Computing and System Wide Green Computing is the best possible way to practice Green Computing. Companies implementing System Wide Green Computing and employees and individuals practicing individual green computing techniques help in a long way in creating an impact to save the planet.

DISADVANTAGES OF GREEN COMPUTING

- Green computing could actually be quite costly.
- Some computers that are green may be underpowered.
- Low initial cost, quick technology change and with planned obsolescence has resulted in a rapid growing surplus of unused hardware around the globe.

LITERATURE REVIEWS

Parmar V P, Pandya A K and Kumbharana C K intheir paper titled "Optimization of Energy Usage for Computer Systems by Effective Implementation of Green Computing" had attempted to identify "Optimum usage of computers so that there is least impact on the environment". The findings of the study suggested that wastage part of computer systems also creates environmental problems due to carbon synthesized materials. The environment is also facing problems like the global warming, Greenhouse effect and the ozone layer is becoming thin. Hence, an effort was made to deal with such problems by effective implementation of technologies and which is also known as Green Computing.

Lakshmi S.V.S.S, Sarwani I Sri Lalita and Tuveera M. Nalini in their paper titled "A Study On Green Computing: The Future Computing And Eco-Friendly Technology" had attempted to identify "The future of green computing". The findings of the study suggested that green computing represents a responsible way to address the issue of global warming. The business leaders can also contribute positively to environmental supervision and protect the environment while also reducing energy and paper costs by adopting green computing practice.

Noble V, Verma P, Gupta A in their paper titled "Managing Garbage of the Digital World" had attempted to identify "the Indian scenario for E-waste management". The findings of the study suggested that the components present in laptop and mobile batteries and other electronic devices are hazardous in nature and must be disposed carefully. The e-waste generated was estimated to be 332,979 tonnes out of which 144,000 was recyclable and actually 19,000 tonnes of e-waste was recycled. The 3R concept of Recycle, Reduce and Reuse is used widely in various institutes and organizations.

Dharna K, Massey R in their paper titled "Management of Rise in E-waste due to Demonetization" had attempted to identify "the management and understanding of E-waste at distinct levels". The findings of the study suggested that there are 3 distinct levels: at personal level, at corporate level and at the government level. At these 3 levels, the society has different roles like at personal level, as the citizen of India, at corporate level, as major companies' Corporate Social Responsibility (CSR) and at government level, as the central government as well as state government. The problems and solutions have also been discussed at these 3 levels.

Dixit M S in her paper titled "Scope and Issues of Green Computing in networking: A Research" had attempted to identify "the various approaches and technologies of Green Computing that can be used by the organizations in the field of networking". The findings of the study suggested about how Energy, Memory and other network resources are efficiently used for environmental and economical perspective by attempting the green technology in communication network. Green IT programs are representing fundamental economic along with environmental sense; it is understandable why organizations are exploring green computing options with such extreme interest across the IT industry.

Wong M H, Wu S C, Deng W J, Yu X Z, Luo Q, Leung A O W, Wong C S C, Luksemburg W J, Wong A S in their paper titled "Export of toxic chemicals – A review of the case of uncontrolled electronic-waste recycling" had attempted to review "the concentrations of persistent organic pollutants". The findings of the study suggested that incomplete combustion of electronic waste in open air and dumping of processed materials are the major sources of various toxic chemicals and when compared with different countries, the environment is highly contaminated by these toxic chemicals derived from the recycling processes.

NnoromI C, Osibanjo O in their paper titled "Overview of electronic waste (e-waste) management practices and legislations, and their poor applications in the developing countries" had attempted to identify "the huge challenges faced by the developing countries in the management of e-waste (electronic waste)". The findings of the study suggested that the change in attitude by governments, appropriate legislation dealing specifically with electronic waste, control of electronic waste dumping, implementation of Extended Producer Responsibility (EPR) and transfer of technology on sound recycling of e-waste are the main problems in effective management of electronic waste in the developing countries.

Vashishtha V, Gupta A, Sarwar S in their paper titled "Green Computing: An Approach of Saving Energy by Computer Virtualization" had attempted to identify "virtualization as an approach to green computing". The findings of the study suggested that green computing has the goals to maximize energy efficiency during the product's lifetime, to reduce the use of hazardous materials and to promote the biodegradability or recyclability of factory waste and unused products. Virtualization, Green Data Center, Cloud computing, grid computing, Power optimization are the technologies of green computing.

Aggarwal S, Garg M, Kumar P in their paper titled "Green Computing is Smart Computing- A Survey" had attempted to identify "The use of green computing as the future of computing". The findings of the study suggested that as more and more companies include some form of reporting on their goals and achievements in the area of CSR, there is a growing awareness among business leaders that greening their IT practices offers the double-win of reducing costs while demonstrating a positive environmental commitment.

Chopra A, Sharma S, Kadyan V in their paper titled "Need of Green computing to improve environmental condition in current era" had attempted to identify "the needs of green computing to conserve the environment". The findings of the study suggested that over the years the idea of green computing has attracted the world due to its environment benefits. At present green computing is under the consideration of businesses organizations and IT industries to improve environmental conditions for the better living of human being. It is an effective approach to protect our environment from the harmful effects of toxic material used during the manufacturing of computing devices.

RESEARCH METHODOLOGY

Descriptive research methodology is being used in the study. Within descriptive research, cross sectional research methodology is used to study the sample from the given target population. The sampling design was Non-Probabilistic Convenience Sampling and a survey was conducted with a sample size of 150 respondents all over Delhi NCR region. It was carried out through a set of structured questionnaires to gather information through a survey from the sample which was convenient selected from the target population.

Purpose of the Study

1. To study the usage pattern by the consumers for electronic gadgets like computers, laptops and mobile phones.
2. To analyze the consumer sensitivity towards Energy Saving.
3. To study the awareness amongst the general public about Green Computing.
4. To study whether the waste collectors should be educated of the harmful effects of e-wastes towards the environment and themselves and how to educate them.

ANALYSIS AND FINDINGS

1. ***To study the usage pattern by the consumers for electronic gadgets like computers, laptops and mobile phones.***

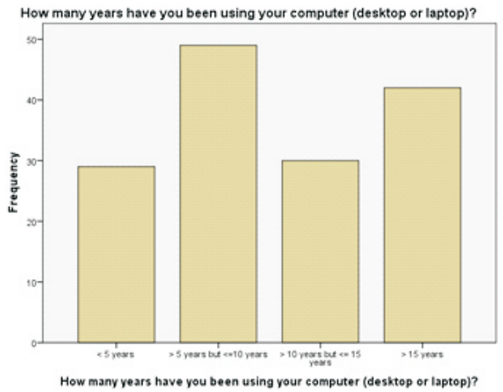

Figure 4: Frequency Chart of Computer Usage

Interpretation:

- 19.7% of respondents use computers for less than 5 years.
- 32.7% of respondents use computers for more than 5 years but less than 10 years.
- 20% of respondents use computers for more than 10 years but less than 15 years.
- 28% of respondents use computers for more than 15 years.

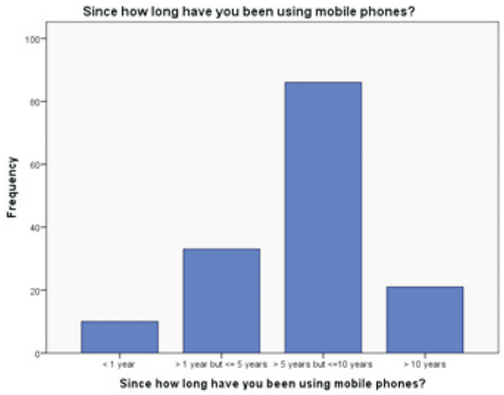

Figure 5: Frequency Chart of Mobile Usage

Interpretation:

- 6.7% of the respondents use mobile phones for less than 1 year.
- 22% of the respondents use mobile phones for more than 1 year but less than 5 years.
- 57.3% of the respondents use mobile phones for more than 5 years but less than 10 years.
- 14% of the respondents use mobile phones for more than 10 years.

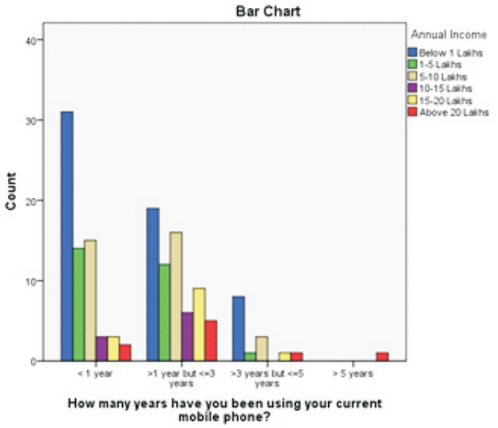

Figure 6: Frequency Chart of Usage of Current Mobile Phone vs Annual Income

Interpretation:

- 44.1% of the total respondents with annual income between 5 and 10 lakhs use their current mobile phone for less than 1 year.
- 32.8% of the total respondents with annual income below 1 lakhs use their current mobile phone for more than 1 year but less than 3 years.
- 7.7% of the total respondents with annual income above20 lakhs use their current mobile phone for more than 3 years but less than 5 years.
- 11.1% of the total respondents with annual income between 1 and 5 lakhs use their current mobile phone for more than 5 years.

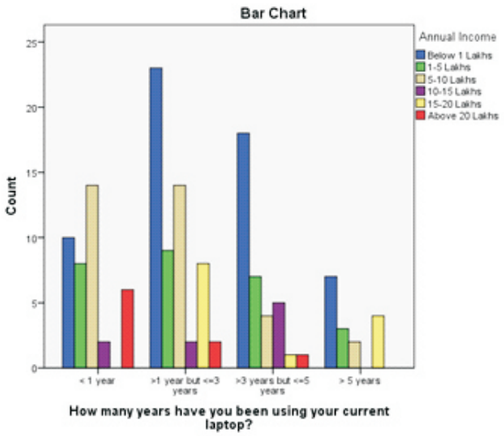

Figure 7:Frequency Chart of Usage of Current Laptop

Interpretation:

- 39.7% of the total respondents with annual income less than 1 lakhs use their current laptop for more than 1 years but less than 3 years.
- 41.1% of the total respondents with annual income between 5 and 10 lakhs use their current laptop for less than 1 year.
- 30.8% of the total respondents with annual income above 20 lakhs use their current mobile phone for more than 3 years but less than 5 years.
- 39.7% of the total respondents with annual income between 15 and 20 lakhs use their current laptop for more than 5 years.

2. *To analyze the consumer sensitivity towards Energy Saving.*

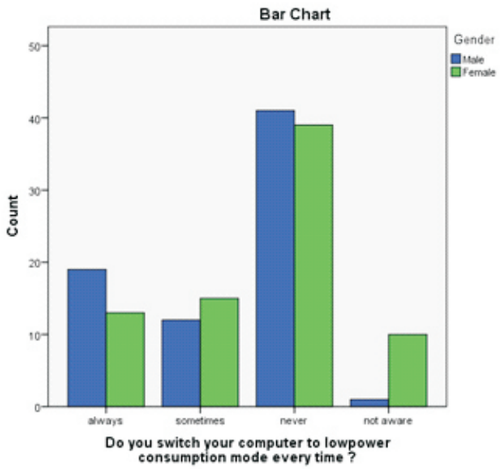

Figure 8: Frequency Chart of Low-Power Consumption vs Gender

Interpretation:

- 56.2% of the male respondents never switch their computers in low power consumption mode.
- 26% of the male respondents always switch their computers in low power consumption mode.
- 19.5% of the female respondents sometimes switch their computers in low power consumption mode.
- Only 1 male respondent is not aware of the low power consumption mode.

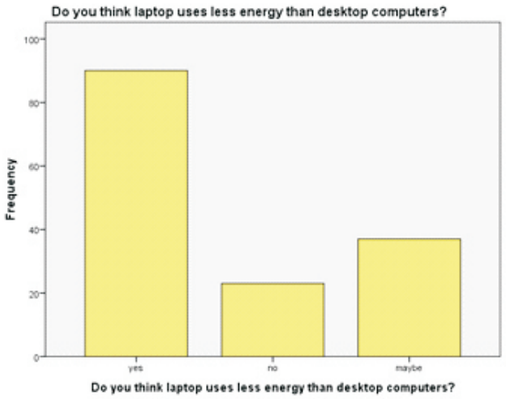

Figure 9: Frequency Chart of Less power usage of laptop than desktop computers

Interpretation:

- 60% of the respondents think that laptop uses less power than that used by desktop computers.
- 15.3% of the respondents do not think that laptop uses less power than that used by desktop computers.

3. *To study the awareness amongst the general public about Green Computing.*

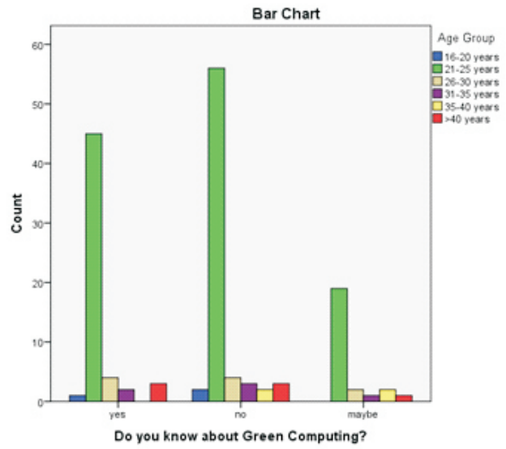

Figure 10: Frequency Chart of Knowing about Green Computing vs Age Group

Interpretation:

- 46.7% of the respondents having the age between 21 and 25 years don't know about Green Computing.
- 40% of the respondents having the age between 26 and 30 years know about Green Computing.

- None of the respondents having the age between 16 and 20 years are in the benefit of doubt in knowing about Green Computing.

4. ***To study whether the waste collectors should be educated of the harmful effects of e-wastes towards the environment and themselves and how to educate them.***

Figure 11: Frequency Chart of Frequency Analysis of Dealing with old phone after having purchased a new one

Interpretation:

- 38.7% of the respondents keep their old mobile phones after purchasing a new one.
- 1.3% of the respondents throw their old mobile phones after purchasing a new one.
- 34% of the respondents give their old mobile phones in exchange offers after purchasing new one.

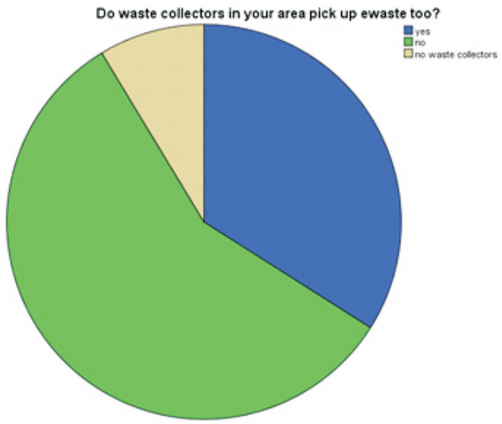

Figure 12: Pie Chart of the Waste Collectors in various areas also pickup e-waste

Interpretation:

- 57.3% of the respondents said that the waste collectors in their area do not pick up e-waste.
- 34% of the respondents said that the waste collectors in their area do not pick up e-waste.
- 8.7% of the respondents said that there are no waste collectors to pick up waste.

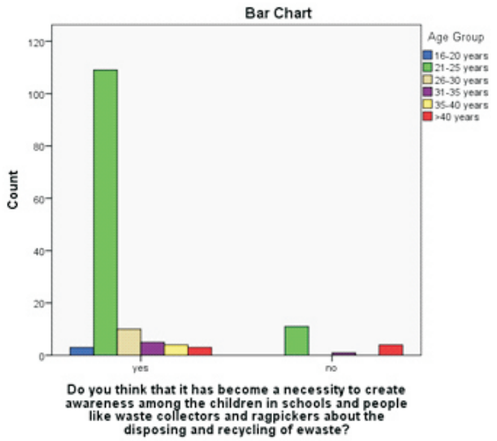

Figure 13:Frequency Chart of Cross Tabulation of Creating Awareness vs Age Group

Interpretation:

- 90.8% of the total respondents of age group of 21-25 years think that it has become a necessity to create awareness among the children in schools and people like waste collectors and ragpickers about the disposing and recycling of e-waste.

CONCLUSION

Green Computing is not only a new trend, it is a technology in itself. The move to become eco-friendlier is more than a means to a better corporate image, it is also the means to reduce cost in an inflating IT budget. Reducing the number of servers using virtualization is considered as one of the best approaches towards Green Computing. For all the organizations and various institutes, being green should be taken as a long-term commitment that could solve the purpose of creating a greener infrastructure. Many of the organizations in the world have started using green methods such as switching off their laptops and computers or keeping them in low power or power saving mode that have saved a lot of cost incurred by the management of the organizations.

From the research done by the circulation of questionnaire in a sample of 150 respondents, it can be concluded that 7.3% of the respondents are not even aware of low power consumption mode in their computers while 53% of the respondents never switch their computers (desktops or laptops) on low power consumption mode. Although 48.7% of the respondents are aware of the risk to the environment because of global warming, carbon footprint, etc., 46.7% of the respondents are not aware of what Green Computing is. Also, 8.7% of the respondents said that there are no waste collectors in their area. This is a state of concern for the people of India where the Honourable Prime Minister Sh. Narendra Modi has been working hard in making the country clean in every aspect through the initiative called "Swachh Bharat Abhiyan".

On the positive note, 67.3% of the respondents think that the main reason for adopting Green Computing is to reduce energy costs. Whereas, 52.7% of the respondents think that the main reason for adopting Green Computing is to conserve limited resources and 53.3% of them think that the main reason is to reduce emissions reducing respiratory problems, acid rain, smog and global climatic change. 38.7% of the respondents keep their old mobile phones after purchasing a new one and 34% of them give it in exchange offers provided by e-commerce sites like Flipkart, Snapdeal, Amazon, etc. Further, 23.3% of the respondents think that the educational institutes have the most positive attitude towards Green Computing. It can also be concluded that 89.3% of the respondents think that it has become a necessity to create awareness among the children in schools and people like waste collectors and ragpickers about the disposing and recycling of e-waste. This is a very good indication of the people towards conserving the environment from hazardous materials present in desktops, laptops and mobile phones.

RECOMMENDATIONS

As from the research conducted above, 89.3% of the respondents think that it has become a necessity to create awareness among the children in schools and people like waste collectors and ragpickers about the disposing and recycling of e-waste. A proper course can be added in the curriculum of the children especially those of primary classes so that they are aware at a very small age and can apply this knowledge in their lives while using computers or mobile phones. All the schools and colleges can also implement IT enabled services and learning methods like more usage of projectors especially in schools for teaching purposes so that the emission of carbon dioxide is minimal. Large IT companies especially computer and mobile phone manufacturing companies should also make policies and guidelines describing the steps and procedures taken by the companies to dispose and recycle e-waste generated during manufacturing.

Google has taken a major initiative towards Green Computing by using a technology called Google green computing. It is a technology which is about energy reserving and carbon footprint of using Gmail via Google Apps. Green computing is still at an introduction stage but it has already established considerable attention towards big and small organizations as well as various institutions all around the globe. Cloud-based services like Gmail allow organizations of all sizes to get these scale advantages of reduced overhead costs, smaller carbon footprint and increased efficiency without requiring the proficiency of an army of data center technicians, hardware designers and software developers.

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Threat to Wild life

Nisha Singh* **Smrita Sinha****

There are few places left on the planet where the impact of people has not been felt. Animals and habitats are at particular risk from land development leading to habitat destruction, poaching and the illegal wildlife trade, Pollution; competition from non-native species and the effects of climate change has also contributed in a massive way to the destruction of the wild life. It is essential to nurture nature. Ignoring nature will lead to high inequity to the ecological balance. As per the media, the world environment day 2016 had been celebrated by focusing on the most important point of environmental issue. This study is focused on the theme of world environment day celebration "fight against the illegal trade in wildlife for life" (zero tolerance for the illegal trade in wildlife) focusing on save the life of wild animals like elephants, rhinos, gorillas, whales, sea turtles, orangutans, pangolins, rosewoods, helmeted hornbills, tigers including other species. It is essential to raise the voice against wildlife crime and damages caused by it and take actions to prevent it.

Keywords: wildlife; illegal trade; poaching; over exploitation; zero tolerance

INTRODUCTION

Dr Prakash Amte is the son of Baba Amte, the famed social worker and activist. One day Dr Prakash and his wife saw some people dragging tied monkeys to be killed or sold. The scene disturbed them so much that they offered to pay the villagers in kind, in return for the animals. And that was how Amte Animal Park, Hemalkasa, Maharashtra, came into existence. Mr and Mrs Amte have created a unique family of wild animals staying together. This is one story of saving the wild life and here is another extreme form of atrocities that the animal world as well as the world of plantation has to undergo. Wildlife is under threat from many different kinds of human activities, from directly destroying habitat to spreading invasive species and disease. Most ecosystems are facing multiple threats. Each new threat puts additional stress on already weakened ecosystems and their wildlife.

Each year, millions of plants and animals are caught and harvested from the wild and then sold as food, pets, ornamental plants, leather, tourist curios and medicine. While a great deal of this trade is legal, yet an enormous proportion of it is illegal. It has led to the death blow of many species and is threatening the survival of several endangered species.

Captive Baby Sumatran Orang Utan Pongo abelii)Pongo

Wildlife crime is the 4th largest illegal trade in the world. Wildlife crime is a big business. Run by dangerous international networks, wildlife and animal parts are trafficked much like illegal drugs and arms. By its very nature, it is almost impossible to obtain reliable figures for the value of illegal wildlife trade. Experts at TRAFFIC, the wildlife trade monitoring network, estimate that it runs into hundreds of millions of dollars.

Some examples of illegal wildlife trade are well known, such as poaching of elephants for ivory and tigers for their skins and bones. However, countless other species are similarly overexploited, from marine turtles to timber trees. Not all wildlife trade is illegal. Wild plants and animals from tens of thousands of species are caught or harvested from the wild and then sold legitimately as food, pets, ornamental plants, leather, tourist ornaments and medicine. Wildlife trade escalates into a crisis when an increasing proportion is illegal and unsustainable—directly threatening the survival of many species in the wild.

At the global scale, illegal wildlife trade ranks as the fourth largest illegal industry after narcotics, human trafficking, and counterfeit products and is valued at approximately US $19-26 billion per year. According to a recent report by the United Nations Office on Drug and Crime, atleast 132,144 seizures of illegal transnational wildlife trade, involving thousands of species, were made across 120 countries in the past decade. Although not a major consumer in the global illegal wildlife market, 20% of all wildlife seizures recorded during 1996-2008 took place in India.

In India, the conditions have become grim. In 2005, the forest officials shockingly revealed that Rajasthan's Sariska Tiger Reserve, once among the best places has lost its entire big cat population. A similar story played out four years later. The same tigers had disappeared from the Panna Tiger Reserves in Madhya Pradesh. In both these cases, it is evident that poaching by organized gangs had played a key role in exterminating the big cats. In subsequent years, seizures of large consignments containing tiger, leopard and otter skins in India, China and along their shared border has thrown a new light on the magnitude and international nature of illegal trade of these Indian species.

Which wildlife is being over exploited?

The hunting, trapping, collecting and fishing of wildlife at unsustainable levels is not something new. The passenger pigeon was hunted to extinction early in the last century, and overhunting nearly caused the extinction of the American bison and several species of whales.

Today, the Endangered Species Act, USA, protects some U.S. species that were in danger from overexploitation, and the Convention on International Trade in Endangered Species of Fauna and Flora (CITES) works to prevent the global trade of wildlife. But there are many species that are not protected from being illegally traded or overharvested.

Fish and other aquatic species

As fishing gear and boats have improved, the fishing industry has become very efficient at harvesting fish and shellfish. The industrialization of the fishing industry and the increasing world demand for seafood have people taking more fish from oceans, lakes and rivers than is sustainable. Prized fish, such as swordfish, cod and tuna, have undergone dramatic declines. In the Great Lakes overfishing has caused whitefish, walleye, and sturgeon populations to decline. Beyond their role in the food supply, freshwater and marine fish are also trapped for the aquarium trade and fished for sport.

Birds

Birds are collected or hunted for sport, food and the cage-bird pet trade (parrots and songbirds are prized as pets). Millions of birds are traded internationally each year. Close to 30% of globally threatened birds are threatened by overexploitation, particularly parrots, pigeons and pheasants. The Carolina parakeet was once the only species of parrot in the U.S., but it was hunted to extinction early in the last century for food, to protect crops and for its feathers (which adorned ladies' hats).

Mammals

People have always hunted mammal species—for fur, food, sport, and for their horns or antlers. Mammals are also trapped for the pet trade, zoos and biomedical research. Today, illegal hunting still threatens many species, especially large mammals such as tigers, rhinoceros, bears and even primates, whose body parts are highly valued in some parts of the world for traditional medicine.

Amphibians

Amphibians are collected and shipped all over the world for the pet trade, medicine, education (frogs are dissected in many biology classes), scientific research and for food (frog legs are a delicacy in many parts of the world). The California red-legged frog, now a federally protected endangered species,

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was over hunted for food and its numbers seriously depleted during the Gold Rush in the area around San Francisco.

Reptiles

Reptiles are harvested and traded around the world for their skins or shells, their eggs, meat, and for the pet trade. Overharvesting of the Kemp's ridley sea turtle's eggs nearly led to its extinction, and today it is still an endangered species. In the U.S., box turtles are being collected at unsustainable levels for the overseas pet trade. Some reptile skins—such as crocodile, python and monitor lizard—are highly prized as exotic leathers.

Invertebrates

Invertebrates make up at least 75% of all known animal species. Insects, oysters, octopus, crayfish, sea stars, scorpions, crabs and sponges are all kinds of invertebrates. Today, many invertebrates — particularly marine invertebrates—are at risk from over harvesting. Chesapeake Bay oysters, once an important part of the Bay economy, are now in decline. Horseshoe crabs, whose eggs provide food for migratory birds, fish and other organisms, are being harvested as bait for eel and whelk fishing. Octopus are suffering declines world-wide due to heavy fishing pressure. Shells and corals are collected for ornaments and jewelry.

Plants

Plants are vital to our survival and are the foundation of most of the Earth's ecosystems. People harvest plants for food, medicine, building materials, and as raw materials for making other products. But we are taking too many plants from the wild. Some plants, such as orchids, are so prized by collectors that they are now endangered and legally protected from poaching by international law. Some medicinal plants, such as American ginseng, have also been so enthusiastically collected that it is now very hard to find them in the wild. A number of tree species that are prized for their wood, such as mahogany, are under threat because of overharvesting.

Measures taken to protect Wild life

Disappearance of iconic species such as elephants, tigers or sea-turtles would be a disaster for conservation efforts. Even loss of any species at a local level, is an erosion of the bio-diversity that underpins the natural systems upon which we all depend for our food security, medicines, fresh air, water, shelter and a clean and healthy environment.

There has been a growing momentum to check illegal trade in wild life at a global level.This year, the UN has given World Wildlife Day the theme "Listen to the Young Voices". Given that almost one quarter of the world's population is aged between 10 and 24, vigorous efforts need to be made to encourage young people, as the future leaders and decision makers of the world, to act at both local and global levels to protect endangered wildlife. To respond to the growing crisis and international call for action, in 2015 the Global Environment Facility (GEF) and the World Bank launched the Global Wildlife Program (GWP). The GWP is a $131 million program that deploys resources along the entire illegal wildlife trade supply chain in 19 countries in Africa and Asia. It aims to reduce poaching through the engagement of local communities and by conserving and protecting wildlife natural habitats; control wildlife crime and reducing trafficking through effective law enforcement; and reduce demand for illegal wildlife by raising awareness and changing behavior.

In 2016, UN Environment launched the Wild for Life Campaign, urging politicians, celebrities and business leaders to help bring global attention to the fight against illegal wildlife trade. The campaign asks participants to find their kindred species and use their own spheres of influence to end illegal trade, in support of two Sustainable Development Goals: SDG14, calling for an end to illegal and unreported fishing, and destructive fishing practices, and SDG15 calling for the sustainable management of land, forests and ecosystems to halt biodiversity loss among other environmental threats.

At national level, many efforts are being made by the current government to control illegal trade in wild life.Odisha Chief minister, Naveen Patnaik addressed the government enforcement agencies and general public to adopt zero-tolerancetowards illegal trade in wildlife. "Due to joint efforts of the wildlife wing and the CID, Crime Branch, illegal trade has been checked to a great extent. Public awareness campigns, involving local communities and voluntary organizations are being organized for protection and conservation of wildlife and to check their illegal trade," said Mr Patnaik while addressing the State-level celebration of the World Environment Day(TOI, June21, 2017). He said that the government is taking all possible steps to protect and preserve wild life through wild life crime

control cell, which is functioning at Bhubaneswar with an objective to take pro-active measures to prevent illegal trade in wild flora and fauna. Over 400 activists were presented PrakrutiMitra and PrakrutiBandhu Awards for contribution to environment protection and preservation.

CONCLUSION

Much work needs to be done. Wildlife products are sold in open violation of national or local laws – and concerted investigations and law enforcement is needed to police any continuing availability. Little or no information is available to alert buyers to the illegal nature of some purchasing options, or regarding the effect the market for these products has on wild populations. Greater awareness of the legality of wildlife souvenir trade is needed to enable travelers to buy wisely.

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Climate Change and Its Hazardous Effects on Society

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"Climate change" refers to any long-term change in Earth's climate of a region or city. This includes warming, cooling and change besides temperature. Climate change caused by factors such as biotic processes, variations in solar radiation received by Earth, plate tectonics, and volcanic eruptions.The average temperature on the surface of the planet has increased 1.7°F since 1880, which may not seem like much but this heat is roughly equal to 40,000 atomic bombs exploding across the planet every single day. Future generations are in big trouble, as it will gradually become warmer and warmer, resulting a longer period of drought in world. If the climate continuous to be increase at such alarming rate, then the climate disaster would be so severe that the entire world could not be able to control or stabilise them. It would result in extinction of several specified species, melting of ice cabs- leaving most of the coastal cities of the world, several feet under water. Over the next decades, it is predicted that billions of people, particularly those in developing countries, face shortages of water and food and greater risks to health and life as a result of climate change. Concerted global action is needed to enable developing countries to adapt to the effects of climate change that are happening now and will worsen in the future.

In this paper we are going to talk about the hazardous impact of climate change, some are already occurring for example, sea level are rising, and snow and ice cover is decreasing. Rainfall patterns and growing seasons are changing.

Keywords: climate change, human activities, glaciers, deforestation, vegetation, carbon dioxide, renewable energy

INTRODUCTION

"No challenge poses a greater threat to future generations than climate change."

- President Obama

Climate change which has brought permanent alterations to earths geological, biological and ecological systems in a big way. These changes have led to the emergence of large-scale environmental hazards to the life on earth , like extreme weather conditions , increased danger of wildland fires loss of biodiversity systems and numerous infectious disease.

As per the data of The world health organization (WHO) estimates that 160,000 deaths, Climatic changes in Siberia, for instance, are expected to improve food production and local economic activity, at least in the short to medium term. Numerous studies suggest, however, that the current and future impacts of climate change on human society are and will continue to be overwhelmingly negative. We cannot deny the fact that the majority of the adverse effects of climate change are experienced by poor and low-income communities around the world, who have much higher levels of vulnerability to environmental determinants of health, wealth and other factors, and much lower levels of capacity available for coping with environmental change. A report on the global human impact of climate change published by the Global humanitarian forum in 2009, estimated more than 300,000 deaths and about $125 billion in economic losses each year, and indicating that most climate change induced mortality is due to worsening floods and droughts in developing countries .

LITERATURE REVIEW

Climate change is more than global warming. The rise in average temperature is only one indicator of broader changes also translating into extreme temperatures, drought, flooding, storms, etc.Climate change is a physical process, but because of the dependency of human on the availability and quality of natural resources any changes in the physical characteristics of the environment will be reflected by cumulative, interacting social and economic impacts.The transport sector is moderately vulnerable to climate

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change and variation, with concerns focusing around ferry services and road maintenance. Karki and Garg (1997) attempts quantitative assessment of alkaloid chemistry (a subgroup of organic chemistry) research in India as viewed through Chemical Abstracts, focusing on world versus citations of India's work. Alkaloid chemistry research performed in India is found to be fairly collaborative and part of main stream science.Arunachalam and Umarani (1998) evaluated agricultural research in India; the research was based on CAB Abstracts 1998, indexing 11,855 publications from India, including 10,412 journal articles, from more than 1280 institutions, also gives an idea of endogenous research capacity.Fish research in India has been examined by Jayashree and Arunachalam (2000), about 460 papers, roughly 5.5% of the world output, came from India every year, of which 82% are journal articles. About 61% of publications are contributed by government laboratories in low impact and low visibility journals and academic institutions in journals of medium impact. According to Stanhill (2001) number of climate change science research total around 7000 and is doubling every 11 years. The annual rate of publication per author and number of authors per paper in climate change science is at 1.75 and 2.5 respectively. Arunachalam and Gunasekaran (2002) undertaken diabetes research in India and China, during 1990–1999, indexed in PubMed, Science Citation Index (SCI) and Biochemistry and Biophysics Citation Index (BBCI). They identified institutions carrying out diabetes research, and these two countries account for 26% of the prevalence of diabetes, they contribute less than 2% of the world's research. Materials science research in India was analyzed by Mohan, Gupta &Dhawan (2003) for a period of five years (1995-1999), based on a study of papers published by Indian scientists in collaboration with foreign researchers, as covered in Material Science Citation Index (MSCI), most of the work involved bilateral rather than multilateral collaboration.Gunasekaran (2006) explored Chemical science research in India, data collected from Chemistry Citation Index in 2002. Roughly, 4.5% of the global R&D output in chemical sciences was contributed by Indian in 2002, about 16% of the papers had international collaboration.Kademani et al, (2006) attempts to highlight quantitatively the growth of world literature on thorium in terms of publication output as per Science Citation Index (1982–2004). During 1982–2004 a total of 3987 papers published, average number of publications was 173.The spurt in the literature output was in 1991–2004, while 94 countries involved in this field of research.Dhawan and Gupta (2007)examined the broad characteristics of India's physics publications output, based on contributions by Indian institutions as indexed in INPSEC-Physicsin 2016. The study found that India's physics related contribution is significantly high (86 per cent) of which 26.4 per cent was in high-impact journals.Gupta, Kshitij, and Verma (2014) have studied computer science output of India during 1999–2008 and reported India's rank of 13th position in the world on computer science literature output.

CLIMATE CHANGE IS RESULT OF HUMAN ACTIVITIES?

Scientists know that the recent cause on climate change is largely due to human activities from an understanding of basic physics, comparing observations with models, and fingerprinting.

Since the mid-1800s, scientists have known that CO2 is one of the main greenhouse gases of importance to Earth's energy balance. Direct measurements of CO2 in the atmosphere and in air trapped in ice show that atmospheric CO2 increased by about 40% from 1800 to 2012. Measurements of different forms of carbon reveal that this increase is due to human activities. Other greenhouse gases (notably methane and nitrous oxide) are also increasing as a consequence of human activities. The observed global surface temperature rise since 1900 is consistent with detailed calculations of the impacts of the observed increase in atmospheric CO2 (and other human-induced changes) on Earth's energy balance.

Scientists studying the rapid rise in global temperatures during the late twentieth century say that natural variability cannot account for what is happening now. The main culprit is emissions of carbon dioxide and other greenhouse gases from human activities, primarily the burning of fossil fuels such as coal and oil. Other human sources of these gases include deforestation, agriculture and industrial processes. Scientists refer to what has been happening in the earth's atmosphere over the past century as the "enhanced greenhouse effect." By pumping man-made greenhouse gases into the atmosphere, humans are altering the process by which naturally occurring greenhouse gases trap the sun's heat before it can be released back into space.

HAZARDOUS EFFECTS OF CLIMATE CHANGE

Detailed researches of climatic events of the past 150 years have revealed that the temperatures have risen all over the globe, with the warming occurring in two phases. The first phase was from 1919 to 1940, with an average temperature gain of 0.35°C, and the second phase was from 1970 to the present, exhibiting temperature gains of 0.55°C. Records show that the past 25 years have been the warmest time of the past 5 centuries. The global warming has resulted in the warming of the oceans, rising of the sea levels, melting of glaciers, and diminished snow cover in the Northern Hemisphere.

Glaciers are considered among the most sensitive indicators of climate change. Their size is determined by a mass balance between Snow Input and Melt Output. As temperatures warm, glaciers retreat unless snow precipitation increases to make up for the additional melt; the converse is also true.

Glaciers grow and shrink due both to natural variability and external forces. Variability in temperature, precipitation, and en-glacial and sub-glacial hydrology can strongly determine the evolution of a glacier in a particular season. Therefore, one must average over a decadal or longer time-scale and/or over many individual glaciers to smooth out the local short-term variability and obtain a glacier history that is related to climate. The two studies examined three neighbouring glaciers in West Antarctica that are melting and retreating at different rates. 'Smith', 'Pope' and 'Kohler' glaciers flow into the Dotson and Cross on ice shelves in the Amundsen Sea Embayment in West Antarctica, the part of the continent with the largest loss of ice mass.

A gradual increase in warmth in a region will lead to earlier flowering and fruiting times, driving a change in the timing of life cycles of dependent organisms. Conversely, cold will cause plant bio-cycles to lag. Larger, faster or more radical changes, however, may result in vegetation stress, rapid plant loss and desertification in certain circumstances.

It is expected that over the next 50 years, climate changes will have an effect on the diversity of forest genetic resources and thereby on the distribution of forest tree species and the composition of forests. Diversity of forest genetic resources enables the potential for a species (or a population) to adapt to climatic changes and related future challenges such as temperature changes, drought, pests, diseases and forest fire. However, species are not naturally capable to adapt in the pace of which the climate is changing and the increasing temperatures will most likely facilitate the spread of pests and diseases, creating an additional threat to forest trees and their populations.

OBJECTIVE

There are many studies, which have taken place on climate change till date. In this paper the focus is made on how Humans activities are responsible for the change in climate and what will be the outcomes of these changes on Human life. The objective of the study is to make people aware about their hazardous activities and how they can improve their activities to save this environment.

Data analysis and interpretations

How you we prevent climate change in the world

1. Power home with renewable energy.

   Choose a utility company that generates at least half its power from wind or solar and has been certified by Green-e Energy, an organization that vets renewable energy options. If that isn't possible for you, take a look at your electric bill; many utilities now list other ways to support renewable sources on their monthly statements and websites.

2. Weatherize

   Building heating and cooling are among the biggest uses of energy. Heating and air-conditioning account for almost half of home energy use. You can make your space more energy efficient by sealing drafts and ensuring it's adequately insulated. You can also claim federal tax credits for many energy-efficiency home improvements.

3. Invest in energy-efficient appliances.

   Since they were first implemented nationally in 1987, efficiency standards for dozens of appliances and products have kept 2.3 billion tons of carbon dioxide out of the air. That's about the same amount as the annual carbon pollution coughed up by nearly 440 million cars. When shopping for refrigerators, washing machines, and other appliances, look for the Energy Star label, it will tell you which are the most efficient.

4. Buy better bulbs.

   LED light bulbs use up to 80 percent less energy than conventional incandescent. They're also cheaper in the long run: A 10-watt LED that replaces your traditional 60-watt bulb will save you $125 over the light bulb's life.

5. Drive a fuel-efficient vehicle.

   Gas-smart cars, such as hybrids and fully electric vehicles, save fuel and money. And once all cars and light trucks meet 2025's clean car standards which mean averaging 54.5 miles per gallon, they'll be a mainstay.

6. Shrink your carbon profile.

   Carbon dioxide is the climate's worst enemy. It's released when oil, coal, and other fossil fuels are burned for energy—the energy we use to power our homes, cars, and smart phones. By using less of it, we can curb our own contribution to climate change while also saving money.

CONCLUSION

It is important that everyone take part and try to stop global warming and other effects on climate change. If the Earth's temperatures continue to rise in the future, living things on earth would become extinct due to the high temperatures. If humans contribute to control global warming, this world would be cooler and the high temperatures we currently have would decrease. If everybody as one take stand and try to end most of the climate changes that are occurring, this world would be a safer place to live on.

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A Breath of Fresh Air : Billions in Change

Rishi Raj Charan*

The time for raising awareness is over. It is time to implement solutions to the most important global problems – water, energy and health.This paper is dedicated to the work done byManoj Bhargava who is one such entrepreneur and a philanthropistwith an estimated net worth of $4 billion, the entrepreneur has pledged to put 99 percent of his wealth into solutions to help the world, for which he has initiated "Stage 2 Innovations", an 'investment fund established to accelerate the large-scale commercialization of innovative, patentable technologies in the global market. The primary focus of Stage 2 Innovations is Energy, Water & Health. The undercurrent of Stage 2 Innovations has been to come with simply simplistic solutions. The aim of this paper is to introduce the initiatives of Stage 2 Innovations in the fields of Energy, Water & Health.

Keywords: Energy, water, Health, Patentable technologies, Global market

INTRODUCTION

"We love our planet!" This statement evokes a humanistic fervour in league with the patriotic fervour we have for our nation. Our contribution in these altruistic spheres, however miniscule adds up to a cause larger than mankind. Having said that, how many of us rise to a level where we can make a major difference in our daily liveswhile being in harmony with the environment?

Manoj Bhargava is one such entrepreneur and a philanthropist. Lucknow-born Manoj Bhargava moved to Philadelphia with his parents during the 1960s and went on to complete his schooling and a year of undergraduate education at Princeton, before dropping out to return to India. After spending 12 years at Hanslok ashram in Delhi, he returned to the US to help his parents with their plastics company. After acquiring some regional plants and turning them around, Bhargava turned his focus from plastics to chemicals, and soon found himself entering a new space altogether.He founded the consumer products firm "Living Essentials Limited Liability Company", which would go on to unleash '5-hour Energy' upon the US. This beverage stands at more than $3 billion in sales annually.

Now, with an estimated net worth of $4 billion, Manoj has pledged to put 99 percent of his wealth into solutions to help the world, for which he has initiated "Stage 2 Innovations", an 'investment fund established to accelerate the large-scale commercialization of innovative, patentable technologies in the global market. The primary focus of Stage 2 Innovations is Energy, Water & Health. The undercurrent of Stage 2 Innovations has been to come with simply simplistic solutions.

OBJECTIVE

The aim of this paper is to introduce the initiatives of Stage 2 Innovations in the fields of Energy, Water & Health.

PREVIEW

The paper shall be covered in the following parts:-

(a) Part I - Energy: Hans Free Electric & Limitless Energy.

(b) Part II - Water: Rainmaker.

(c) Part III - Health: Renew.

PART I-ENERGY: HANS FREE ELECTRIC & LIMITLESS ENERGY

Problem. We cannot imagine our life without electricity. Not only would we have no cell phones, computers or television, it would be difficult to light and heat our homes or prepare food without burning wood or coal. Food storage would be impossible. Half the world currently lives like this. Now imagine the difference electrical power could make to the lives of these people.

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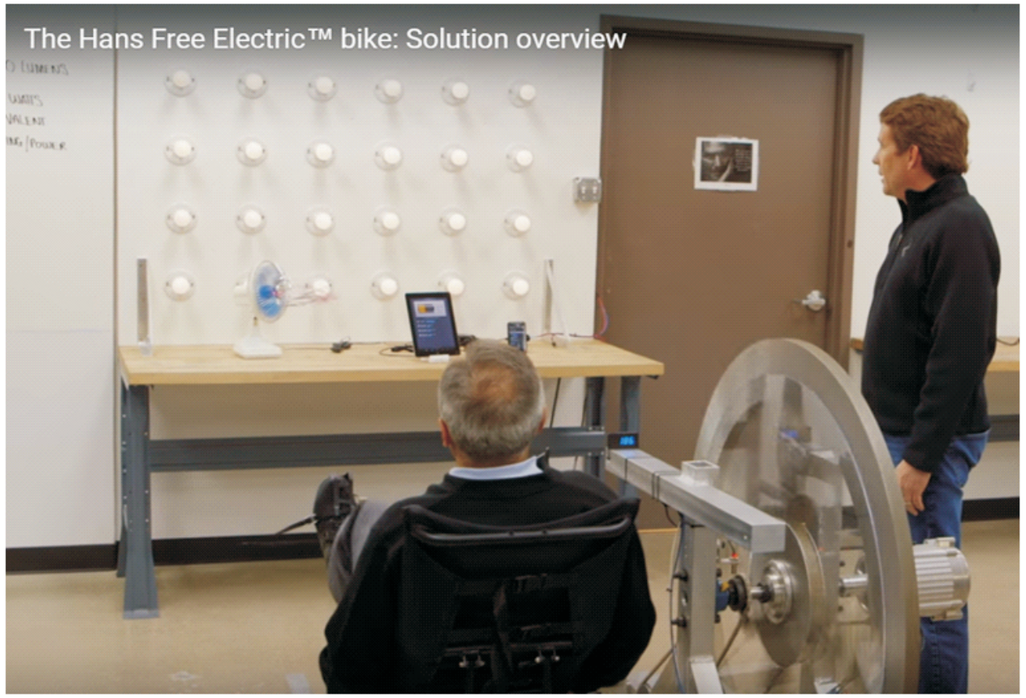


Solution. The Hans Free Electric machine gives people the power to generate electricity themselves – pollution free. The machine is small, light and simple. Here's how it works: A person pedals a hybrid bicycle. The bicycle wheel drives a flywheel, which turns a generator, which in turn charges a battery. Pedaling for one hour yields electricity for 24 hours with no utility bill, no exhaust and no waste.

Problem. Burning fossil fuels and creating nuclear reactions to generate electricity comes at a high cost both politically and environmentally. Alternative methods are limited and come with tradeoffs. The answer to these problems is right under our feet.

Solution. Not too far below the surface of the Earth, in the mantle, the temperatures range between 500-4000°C. This heat can create enough clean energy to power the world, and help keep things cool above. Using cables made from graphene, a form of pure carbon 100 times stronger that steel, the heat can be conducted to the surface of the Earth to run turbines and generate electricity – without burning anything. This is called Limitless Energy.

PART II- WATER: RAINMAKER

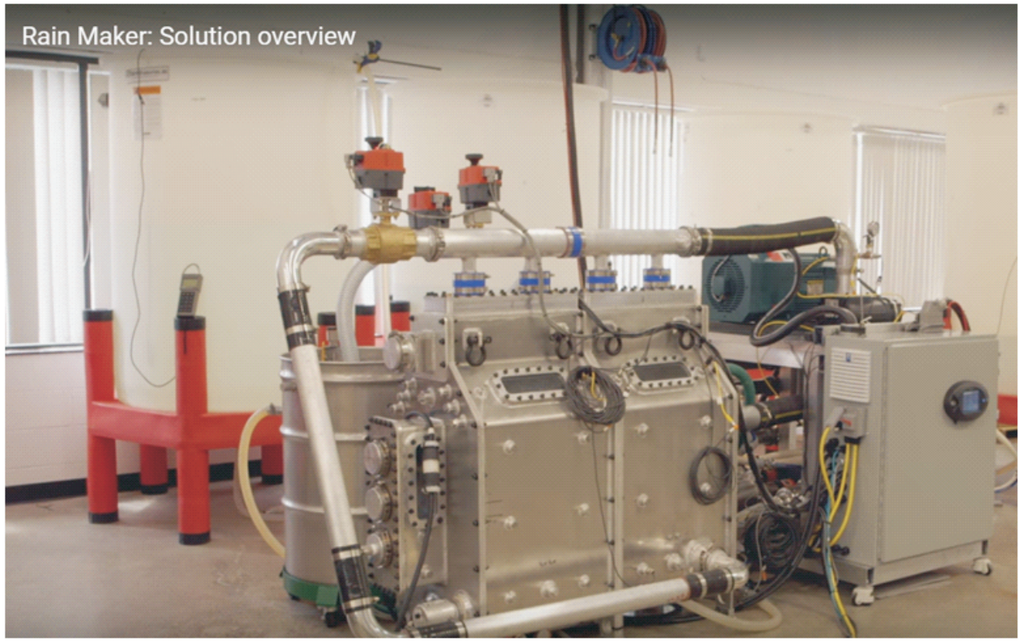
Problem. Half the world's population lives without adequate access to fresh, clean water for drinking, farming and sanitation. During long periods of drought, the problem becomes more serious. But what if we could make more water?

Solution. A machine called Rain Maker comes to the rescue. It mimics nature, turning seawater or polluted water into fresh water suitable for drinking and agriculture. Rain Maker makes more than just a little water. One machine the size of small car can make a thousand gallons per hour. Unlike other desalination systems, Rain Maker recycles its heat energy making it incredibly clean and efficient.

PART III- HEALTH : RENEW

Problem. Good blood circulation is the cornerstone of good health. Blood delivers nutrients and oxygen and removes waste from our cells. When blood flows freely and efficiently, the body is able to defend itself against disease. But poor blood flow can result in serious health problems like heart disease, diabetes, stroke, high blood pressure, dementia and cancer.

Solution. Renew is a blood flow enhancement machine that uses ECP (External Counterpulsation). ECP enhances blood flow by squeezing blood from the lower body into the core body while the heart is at rest. It's like an auxiliary heart pumping blood between heartbeats. This action increases circulation while reducing the heart's workload. The enhanced circulation widens blood vessels causing more blood to reach all areas of the body.



RECOMMENDATION & CONCLUSION

The availability of electricity has affected pollution from fossil fuel sources which has created huge health problems for people and the planet. The lack of electricity has been instrumental in keeping education, livelihood and basic necessities out of reach.

Solving water shortages will impact humanity in the most significant way. The availability of fresh water means global and economic stability which is most vital for sustenance and progress of mankind.

The healthcare system for both rich and poor is inadequate. It focuses on treating illness. But a more sensible approach is to prevent illness. Technologies that help prevent illness exist. They need to be implemented for the benefit of people – free from profit seekers and government red tape.

The embarkation of innovative, progressive, path breaking and simple technologies will not only lead to an ecological balance but secure the future generations of mankind.

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Time to Quit Using of Disposable Plastic Tableware - A Step Towards Sustainable Development

Riyya Agarwal*

Over the years the usage of disposable plastic cutlery has increased tremendously. France has been through significant environmental problems like emission of carbon dioxide which in turn is causing air pollution and raising the temperatures causing climatic concerns.

So in an initiative to save the environment, France became the first nation to ban plastic tableware. The nation introduced this ban towards the end of August, 2016. The law is a part of "Energy Transition for Green Growth Act" which will be effective from 2020. So France will be very soon saying "au revoir" to the very handy plastic disposables. This step has been introduced to cut down on greenhouse gas emissions and also to foster the usage of renewable and sustainable energy resources. As we are moving from conventional methodologies to the newer and advanced techniques, why shouldn't one apply the same approach towards our beautiful environment.

The present paper studies how the extensively the plastic tabewares are used in our daily routines and the adverse effects that it is creating on the nature. The survey is being done through the secondary research. The outcome is to achieve and identify few measures and steps that can be taken up to combat the risk which these disposable cutleries are causing.

Keywords: Plastic tableware, pollution, waste, plastic cutlery, environment, climate change

INTRODUCTION

Our environment constitutes of the living organisms that interact among themselves and the physical surroundings that envelopes them. They are all interdependent on each other for their proper functioning. It is necessary to maintain a balance in nature so that none of these factors get exploited to fulfil the needs of the other. As a result this imbalance will contribute to various irregularities in the ecosystem that would give rise to climatic changes as well as environmental problems.

Cups and cutleries are like the basic products for the food joints to work. They are also extensively used by hospitality industry in aeroplanes, trains and many more places. But in an attempt to fulfil these necessities we are degrading the nature. These plastic disposable are very conveniently used in our day to day lives, be it to run a business, host a party.

France passed the law to ban the usage of disposable tableware such as plastic plates, cups and cutlery. Further the law suggested to use biologically sourced material for replacing the plastics like polypropylene (PP) and polystyrene (PS) which is currently used in its production. Plastics are synthesised chemically by heating crude oil and other organic compounds at high temperatures using different processes. Formation of plastics like PP and PS takes place at high temperatures and also they are difficult to recycle.

The world is transforming at a very rapid rate in terms of technology, fashion, choices so we must inculcate a few habits that can conserve the environment.

OBJECTIVES

The present study attempts to understand the ground reality through the following objectives.

- To assess the level of attitude of the public towards disposal of plastic wastes.
- To identify and propose a more sustainable plastic waste recovery strategy

LITERATURE REVIEW

Rajavani (2012): The author throws light on how packaging can be one of the prominent factors that may influence the sales growth of the product. According to him marketing strategy must be carefully designed by the marketers. They must keep in mind that over a period of time, there is a shift in the consumer behaviour for fast moving consumer goods. So while making marketing strategy, marketers must study the behaviour and attitude of the consumers so that there is utmost feeling of satisfaction among them and thereby value is created.

RESEARCH FINDINGS

According to the studies majority of the waste i.e. 60% is contributed from just five countries namely China, Indonesia, Philippines, Thailand and Vietnam. To save its land from any undesired contribution France came forward to abandon the usage of disposable plastic tablewares.

Reasons of growth in usage of plastic:

Disposable plastic products are extremely durable as they are resistant towards water and chemicals. Also plastic cutlery and cups have physical characteristics such as they are strong and have high thermal and electrical insulation. Plastic products are water proof in nature. All of these attributes make them an easy to handle product. Plastic dishware's are available in abundance and are inexpensive. Due to the excessive use and consumption there is rise in production of plastic products. Although plastic products have great advantage for the food industry but the huge increase in plastic packaging has immensely increased plastic waste. People have become more inclined towards single use plastic cutlery as it has eliminated the use of water, electricity and manpower to wash them which added to the convenience.

Reasons behind ban:

Plastic disposables pose a great threat to our environment. If dumped openly and in contact with moisture and rain, they might become a cause for generating germs and viruses. Further that can spread diseases

Incineration of waste disposal emits harmful pollutants and fumes. They are hazardous to living organisms. They pollute the water bodies and have adverse effects. Its decomposition time is quite high so until then they remain in the environment. For the production of plastic, fossil fuels are consumed that in turn degrade our climate and environment. Disposable plastic table wares are mostly made from polypropylene (PP) and polystyrene (PS) which is very difficult to recycle. As it is a very complex process to recycle them so they eventually are disposed into landfills. Also forks and spoons are made from Polyvinyl chloride (PVC). It is very toxic gases are released even it initial production stage. It poses a great risk to the workers health.

Most of the consumer plastic is send to landfills which take ages to break down. These are used for quite a short duration but it takes years to get degrade naturally.

Plastic bags are also used excessively as they are very cheap and strong. These are used for serving multiple functions. Problem arises as with the growing population their use is expanding. They not only take time to decompose but are also responsible for visual pollution. They are dangerous for both terrestrial and aquatic animals. Rapid industrialization and unplanned urbanization has contributed largely to the degradation of the environment.

Controversies:

Few people argued that the law was violating the existing European Union law formulation that there should be free movement of goods and services. Introduction of banning posed a hindrance in it. Further, manufactures of plastic cutlery products were at loss, they wanted protection for themselves. Also Pack2Go Europe, a food packaging association confronted France's ban and asked for legal action for violating the European law. People also connected it with anti-social belief as it influenced lower income families who rely on plastic utensils. As a result the ban got postponed till 2020.

Even India has taken a step forward to ban similar kind of products. National Green Tribunal has initiated a ban on plastic bags and tableware in National Capital Territory.

Effects to people:

Plastic dishware is a massive business worldwide. It not only serves directly to the end customers but is also used extensively by food outlets for serving and packaging purposes. Be it a coffee vending machine where one can find plastic cups and glasses or the takeaway restaurants which highly rely on plastic spoons, knives and forks. Also ban will pose difficulties to plastic disposable manufactures. They would be affected by this step.

But looking into the flip side of this ban it will enable sustainability in the environment. The pollution levels in the air, of water and land can be curbed. It

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will ensure a safe and secure place for marine species and human beings.

RECOMMENDATIONS

Few of the biodegradable and organic means include using of cups, plates, bowls and glasses made of sugarcane fibre and birch wood. They get decomposed within 4 months. Other effective and healthy way may be using barley made edible cutlery. These are made from flour mix of sorghum, rice and wheat. After use either one can consume them or else it will naturally decompose. Also cutlery produced from corn starch can be used. Further they are available in sweet and salty flavours. The use of plastic can be minimized by transporting and delivering of liquid products in concentrated and viscous form.

Further the French government has provided a parameter for the usage of disposable tableware i.e. it must be 50% biologically sourced. So that they harm the nature less. This suggests that it will help in easy decomposition of the crockery without using much of the energy resources. Biodegradable plastics are costly to produce as they consume huge amount of resources in their production. So wooden spoons, forks and knifes can be seen as a potential. As they are obtained from biological source i.e. plant, production of this would not intervene with the environment. Mass production of wooden cutlery can be done and its production will not even cause pollution. Also each unit that would be produced will not be synthetically made but extracted and be eco-friendly. It would give a better eating experience and definitely be good for the planet. Also simultaneous plantation of trees can be done this will maintain the balance and beautify the Earth.

Further Polyethylene terephthalate (PET) packs can be used for serving and packaging purposes. It may be further used to make disposable plates and glasses. They are a good barrier to water vapour and gases. It is eco- friendly throughout its life cycle. So it offers high recyclability. Also PET is energy efficient as they are not made at high temperatures.

Besides this the government can charge environmental tax on the use of disposable plastics.

One should switch to various other means to fulfil the need of plastics. To bring about a change certain alternative resources must be looked upon. So that need is efficiently satisfied without degrading our mother Earth.

LIMITATIONS OF THE STUDY

- Research is based on the data collected from Secondary sources.
- Possibility of ambiguity and biasness can take place as the meaning of the data can be interpreted differently on some parts.
- The sample for the study was limited. Therefore, it might not give true picture as it would have been if large number of resources was to be taken.
- Time for the study was limited.

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Reserch Paper on Air Pollution in Delhi

Prakhar Dwivedi*

Air pollution is in charge of numerous medical issues in the urban regions. Recently, the air pollution status in Delhi has experienced many changes as far as the levels of contamination and the control measures taken to diminish them. This paper gives a proof based knowledge into the status of air pollution in Delhi and its impacts on well being and control measures founded. The urban air database discharged by the World Health Organization in September 2011 detailed that Delhi has surpassed the most extreme PM10 confine by right around 10-times at 198 µg/m3. Vehicular discharges and modern exercises were observed to be related with indoor and open air pollution in Delhi. Contemplates on air pollution and mortality from Delhi observed that all-normal cause mortality and bleakness expanded with expanded air pollution. Delhi has found a way to decrease the level of air pollution in the city amid the most recent 10 years. Nonetheless, more still should be done to additionally diminish the levels of air pollution.

Keywords: air pollution Delhi , Problems, control measures

INTRODUCTION

Air pollution refers to the contamination of the earth's environment with materials that interfere with human health, quality of life or the natural functioning of the ecosystems or have adverse affect on human being and the biological system.An air pollution is a substance noticeable all around that can affect people and the environment. The source of air pollution can be strong particles, fluid beads, or gasses. Essential poisons are generally created from a procedure, for example, fiery remains from a volcanic eruption. Different illustrations incorporate carbon monoxide gas from engine vehicle fumes, or the sulphur dioxide discharged from plants. E-Ground level ozone is a noticeable case of an optional toxin. The real types of pollution incorporate water pollution, air pollution, noice pollution and soil sullying. Different less-perceived structures incorporate warm pollution and radioactive risks. It is hard to consider any one specific shape in charge of greatest hazard to wellbeing;air and water pollution have all the earmarks of being in charge of a huge extent of pollution related medical issues.

Recently, the air pollution status in Delhi has experienced many changes regarding the levels of toxins and the control measures taken to decrease them. This paper gives confirmation based knowledge into the status of air pollution in Delhi and its consequences for wellbeing and control measures founded.

Objectives

the study aim is to examine the interaction of pollutant mixtures and weather on health and health inequalities,now and in the context of future air quality and climate policies,through epidemiological studies based on the development, testing and application of multi- pollutant data that are disaggregated in time and space.

Status of air pollution in Delhi

The air quality in Delhi, the capital of India, as per a WHO review out of 1600 world urban communities, has the most exceedingly terrible air pollution on the planet. Two different urban areas in India have more regrettable air quality than Delhi: Gwalior in Madhya Pradesh, and Raipur in Chhattisgarh.

Air pollution in India is evaluated to slaughter 1.5 million individuals consistently; it is the fifth biggest executioner in India. India has the world's most astounding passing rate from perpetual respiratory sicknesses and asthma, as per the WHO. In Delhi, low quality air harms irreversibly the lungs of 2.2 million or 50 percent of all kids.

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Air quality or surrounding (open air) air pollution is spoken to by the yearly mean centralization of particulate matter PM10 (particles littler than 10 microns) and PM2.5 (particles littler than 2.5 microns, around 25 to 100 circumstances more slender than a human hair).

The world's normal PM10 levels, for the period 2008 and 2013, in view of information of 1600 urban areas in 91 nations, go from 26 to 208 micrograms for every cubic meter of air (µg/m3), with the world normal being 71 µg/m3. 13 of the 25 urban areas worldwide with the largest amounts of PM are in India.

In 2010, the time of the WHO overview, the normal PM10 level in Delhi was 286. In 2013, the PM2.5 level was 153. These levels are viewed as extremely undesirable. In Gwalior, the city with the most exceedingly awful air quality in India, the PM10, and PM2.5 levels were 329 and 144 separately. For correlation, the PM10 and PM2.5 levels in London were 22 and 16 individually. The PM levels in Delhi have turned out to be more regrettable since the WHO review. In December–January 2015, in Delhi, a normal PM2.5 level of 226 was noted by US consulate screens in Delhi. The normal in Beijing for a similar period was 95. Delhi's air is twice as awful as Beijing's air.Safe levels for PM as indicated by the WHO's air quality rules are 20 µg/m3 (yearly mean) for PM10 and 10 µg/m3 (yearly mean) for PM2.5.

Effects of Air Pollution on Health

An expansive number of studies in Delhi have analyzed the impact of air pollution on respiratory capacities and the related dismalness. The one of the reviews among them was the led by the Focal Pollution Control Board in 2008, which recognized noteworthy relationship with all applicable antagonistic wellbeing outcomes. The discoveries were contrasted and a provincial control populace in West Bengal. It was found that Delhi had 1.7-times higher predominance of respiratory side effects (in the previous 3 months) contrasted and rustic controls ($P < 0.001$); The chances proportion of upper respiratory manifestations in the previous 3 months in Delhi was 1.59 (95% CI 1.32-1.91) and for lower respiratory indications (dry cough, wheeze, windedness, trunk distress) was 1.67 (95% CI 1.32-1.93). Pervasiveness of current asthma (in the most recent 12 months) and doctor analyzed asthma among the members of Delhi was fundamentally higher than in controls. Lung capacity was lessened in 40.3% people of Delhi contrasted and 20.1% in the control amass. Delhi demonstrated a measurably huge ($P < 0.05$) expanded pervasiveness of prohibitive (22.5% versus 11.4% in control), obstructive (10.7% versus 6.6%) and in addition consolidated (both obstructive and prohibitive) kind of lung capacities deficiencies (7.1% versus 2.0%). Metaplasia and dysplasia of aviation route epithelial cells were more continuous in Delhi, and Delhi had the more prominent commonness of a few cytological changes in sputum. Other than these, non-respiratory impacts were likewise observed to be more in Delhi than in country controls. The pervasiveness of hypertension was 36% in Delhi against 9.5% in the controls, which was observed to be related with repairable suspended particulate matter (PM10) level in encompassing air. Delhi had essentially more elevated amounts of unending cerebral pain, eye bothering and skin aggravation.

- Consequences for kids

  2.2 million kids in Delhi have irreversible lung harm because of the low quality of the air. Furthermore, explore demonstrates that pollution can lower kids' knowledge remainder and increment the dangers of extreme introvertedness, epilepsy, diabetes and even grown-up onset ailments like different sclerosis.

- Impacts on grown-ups

  Poor air quality is a reason for diminished lung limit, migraines, sore throats, hacks, exhaustion, and early demise.

Control Measures Instituted by the Government of Delhi

Over the previous month, there have been rehashed calls from tree huggers and activists for extreme measures on some portion of the organization to clean the poisonous air in Delhi, considered the world's most dirtied city. Considers have demonstrated that vehicular outflows and tidy from development locales represent rising air pollution levels and exhaust cloud in the city.

This year, the clamor has seen a large number of measures proposed by the state government and also the Preeminent Court of India in order to guarantee that future eras are not hurt by the air. The Delhi government has proposed the odd/even run wherein autos with odd-numbered enrollment plates would utilize on odd dates and those with even-numbered enlistment plates would do as such on even dates. The thought is to decrease blockage and also to diminish pollution coming about because of vehicular outflows. The top court has requested that Delhi activity police with appropriate covers. The court noticed that the policemen, who remain for extend periods of time at activity signs, ought to be provided with veils so that their well-being is not traded off. Incomparable Court has additionally prohibited the enlistment of extravagance SUVs and diesel autos over 2000cc in the national capital. Diesel autos are accepted to be a noteworthy wellspring of vehicular outflows. A seat headed by the Main Equity had noticed that it was not reasonable for rich individuals to purchase extravagance autos and hence dirty Delhi.

The green cess on business vehicles entering Delhi has been climbed by the top court by an astounding 100 for every penny. The SC-designated Condition Pollution Control Specialist has guided the Delhi government to introduce sheets telling the new cess in 125 toll stalls crosswise over Delhi. The top court has requested that all cabs utilizing in the city must change over to CNG from Spring one year from now. Additionally, business vehicles which are enlisted before 2005 won't be permitted to enter the national capital.

National Green Tribunal (NGT) has issued bearings to all specialists to entirely execute prior requests with respect to the restriction on blazing of waste and fine on outflow of development clean. The seat required a move made report and a "rundown of guilty parties" from all experts on the following date of hearing. NGT has asked the focal and state government not to purchase diesel vehicles for its work force. It additionally asked open organization offices and civil bodies to take endeavors to progressively eliminate diesel vehicles. In a different request, the NGT coordinated the state administrations of Delhi, Punjab, Rajasthan, Haryana and Uttar Pradesh is to quickly boycott the smoldering of harvest deposit. In prior requests, the NGT had noticed that the practice was adding to the rising air pollution in NCR.

To give elective methods of transport to individuals amid the odd-even manage, the administration said it would include 1,000 more transports in three months. Additionally, 9,000 CNG contract carriages will be reserved into Delhi to expand open transport. The Delhi government has forced a situation remuneration punishment of Rs 50,000 on 38 noteworthy ventures over the city for bringing on clean pollution. Authorities said sees have been sent to every one of the undertakings. While a couple of the ventures have answered requesting "reevaluation" of the remuneration expense, 26 of them are yet to record their answers.

Recommendations

Vehicles cause pollution from emission, road dust from the material being transported. Odd-even is the best way to reduce pollution from vehicular emission which Delhi government has already started. But CNG vehicles shouldn't be exempted from it. Some would encourage us to switch to CNG vehicles but it isn't a long term solution. An engine running on petrol for 100 km emits 22 kilograms of CO2, while covering the same distance on CNG emits only 16.3 kilograms of CO2. So according to that, switching to CNG will reduce only 21% emission of CO2, which is significant but not a complete solution. Electric based Rickshaws should be promoted instead of CNG cabs. Main source of pollution is from trucks. Supreme Court has restricted entry of trucks to some extent. The trucks that are bound for Delhi will be allowed after 11 pm instead of 9 pm . But those trucks even after 11 pm, carry transport material like sand, grains, cement and construction material openly. Some would disagree, but this is a huge source of increasing particulate matter in Delhi. Delhi government should restrict the trucks to transport such type of material in airtight seal trucks only.Proper waste management should be carried out all over Delhi instead of simply dumping it in a large area. One episode of Satyamev Jayate gives an insight in waste management techniques and stories. Construction in Delhi should be taken care of by Delhi Government.

CONCLUSION

The Administration of National Capital Region of Delhi has found a way to decrease the level of air pollution in the city amid the most recent 10 years. The advantages of air pollution control measures are appearing in the readings. Nonetheless, more still should be done to additionally diminish the levels of air pollution. The effectively existing measures should be fortified and amplified to a bigger scale. The legislative endeavors alone are insufficient. Interest of the group is critical to make a discernible impact in the diminishment of pollution. The utilization of open transport should be advanced. The utilization of Metro rail can be empowered by arrangement of a sufficient number of feeder transports at Metro stations that employ with the coveted recurrence. More successive

checking of Pollution Under Control Authentications should be embraced by the urban specialists to guarantee that vehicles are emanating gasses inside admissible standards. Individuals should be instructed to turn off their vehicles when holding up at activity crossing points. In addition, the "upstream" elements in charge of pollution additionally should be tended to. The regularly expanding inundation of transients can be diminished by creating and making openings for work in the fringe and rural zones, and in this manner avoid encourage blockage of the effectively gagged capital city of Delhi.

Wellbeing, as we as a whole know, is an all-inescapable subject, lying not just inside the areas of the wellbeing office however with every one of those included in human advancement. Numerous incredible researchers from Charaka to Hippocrates have focused on the significance of condition in the wellbeing of the person. In this manner, each one of the individuals who assume a part in altering the earth in any capacity, for reasons unknown, need to add to defend individuals' wellbeing by controlling every one of those elements which influence it.

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