

IT and Conservation of Biodiversity

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Abstract

The boom of Innovation and research marks this century. But the major questions that arise are: Is it sustainable? Is it conducive to the mother earth? Very late human being realized, in his quest for easy life, comfortable life, and greed for achievement that he has actually made the parable of "The Goose with the Golden Eggs," come true. Human being in the race of advancement has dug its own grave.

This study investigates the speed with which religious activities are polluting the water bodies and destroying the rich biodiversity. A survey between 2010 and 2013 was conducted which highlights the destruction of environment that is going on which has ruined the ecological balance and is heading towards destruction of biodiversity. The study, in the backdrop of floods at Kedarnath, Mumbai and Nagpur area, highlights what can be done to save humanity and the rich biodiversity of India.

The key finding is that there is an urgent need to take steps to prevent religious and tourist places from mass tourism. Another, major step to be taken is restricting people from immersing idols and dumping of the wastes in the water bodies or man will be an extinct animal from this globe. The ray of hope is to take steps to prevent negative footsteps of human kind to prevent disasters. IT companies can play major role in conserving Biodiversity by promoting eco friendly idols and giving simulated experience to religious events.

Keywords: Pollution Biodiversity, Solid Waste Sustainability, Idol Immersion.

1. Introduction

Man is the creator and the destructor of the environment since the environment is the sum total of all biological, chemical, physical, and economical activities of mankind. Man paid no heed while destroying the niche of the native people, who thrived on the natural resources. He even denigrated the natural resources and restricted the geographical space of the animals. His innovations have resulted in massive break down of the system and also of the mother Earth. The recent times have started to show the impact of such negative growth by taking man in his loop of destruction by indirectly affecting him. Man should have had a plan for maintenance but, now is on the run for break down maintenance because of his over indulgence and negligent attitude towards environment and sustainable growth.

Man is the creator and the destructor of the environment since the environment is the sum total of all biological, chemical, physical, and economical activities of mankind. Recent times, has witnessed the consequences of digressions of mankind with nature and the disrespect that he had shown for the planet Earth of which he is an inhabitant. These pollutants have led to great health hazards like birth of high risk neonates, children with malnutrition, increase in cancer and respiratory disorder.

An innovator while looking for innovation looks at the target customers, the way his organization and he would be benefited by his innovation and research, but he keeps a blind eye to the people who would be affected, the environment and the geographical space of the animals that he is going to destroy.

The consumerist society with their greed has exploited the resources of the earth but failed to see what is the impact of pollution even in the minds of the children that, a child of ninth standard expresses herself thus:

*"Pollution a problem of global concern.
Weary concern burnt the nation bare.
Ignorance - the procreator of pollution,
It rolled it to devastation.*

*Industries throw effluents in water,
Which makes its purity shorter.
The vehicles spit smoke and dust,
And pollute the earth's crust.*

*People cut forests for daily use,
And make the nature's misuse.
Very loudly people blow their horns,
In the way of pollution free economy, sow the thorns.*

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*The health of people it has affected,
A danger to survival of life it has erected
People throw waste here and there,
Of land pollution they do not care.
Pollution has raised the earth's temperature.
This has led to extension of many large small creatures,
Pollution has made the nature to weep,
It has also made many problems to creep...⁵.*

BBC has reported recently that the problem has increased immensely and a condition has become so grave in Beijing in China that children have started living a box existence. They prefer schools that have even playgrounds inside glass dome where pure air is provided artificially. Everyone is advised to move with a mask. India is also on the same track. Metro cities are getting highly polluted. In Delhi smog was reported several times. Many cities teenagers wear mask as shown in the Figure 1.

The recent floods of Kedarnath and Nagpur and a few years back in Mumbai are a reminder to the humanity of the evil deeds of mankind for which he must feel guilty. These are some examples of how fragile and susceptible, human being has become to various natures' hazards.

Kedarnath floods destroyed millions of people and many were stranded for a long time in Kedarnath. It has become a ghost town. A popular religious destination where people in thousands flocked every year has been deserted. The mountain on which the temple sits had become fragile because, of illegal construction of hotels. The construction exceeded far more than the capacity of the land. The path of water movement was congested and destroyed. Similar was the case in Mumbai and Nagpur this year for the first time in life. The cement construction had reduced the land which could absorb water.

When the water flows in excess then naturally there is no place for its absorption and the flash floods cannot be directed through channels and absorbed.



Figure 1. Movement within cities is with mask because of high level of pollution¹.

Petley¹⁰ has analysed the situation at Kedarnath. Figure 2 helps to arrive at a plausible scenario as to what had caused the massive tragedy at Kedarnath virtually annihilating it. The flow surged down further and caused heavy devastation downstream as well.

According to Petley¹⁰, the tragedy was because of two reasons: '(i) landslide-induced debris that came from the glaciated area in the north-east and (ii) a glacial-related flow that originated from the north-west glacier.' The images present distinctly the two flows.

Petley, from his analysis of the images confirmed that debris flow was the reason for disaster.

Petley has also clearly explicated the formation of Chorabari Tal as called by the locals. In fact, this was a popular tal where pilgrims trekked a few kilometres along the west side of the valley to have a dip. The Chorabari glacier has been retreating constantly in modern times, and according to D.P. Dobhal of the Wadia Institute of Himalayan Geology, 'it has retreated about 300 m since 1960.'

"The effect of the retreat is to leave a moraine that can allow lakes to form, which can then collapse," pointed out Petley in an e-mail message to *Frontline*. "In Kedarnath, this is exactly what had happened," Petley added.

'A wall of water was formed that swept the Kedarnath town in a flash because the moraine had been breached by the rapidly building up water due to heavy rainfall and the water overtopping the moraine wall which led to the sudden release of large volumes water and resulted in a massive wall of water sweeping

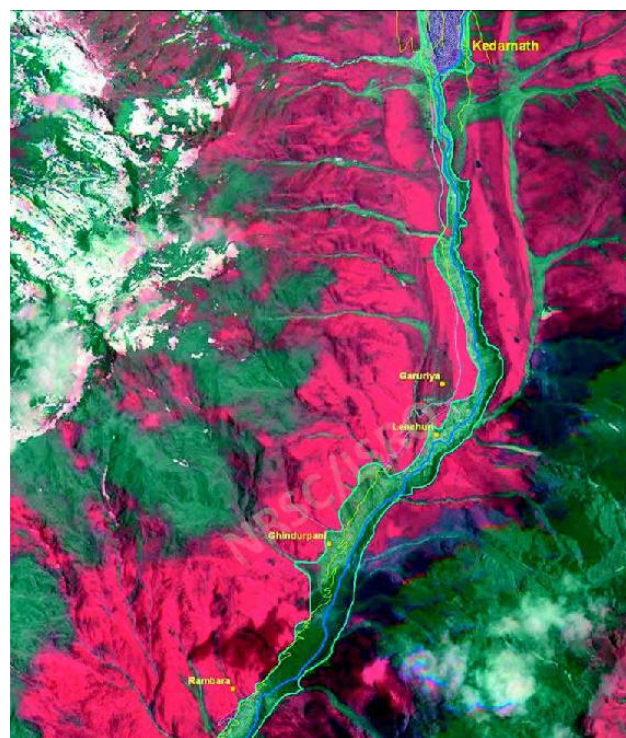


Figure 2. The flood-affected area in Kedarnath analysed on the basis of Resourcesat-2 satellite data².

across the Kedarnath valley and the town and causing a huge flash flood', Figure 3 clearly indicates the phenomenon⁸.

There are a number of rivers in India that exist only on maps but they are no longer in actuality. The rivers have got blocked because of dumping of solid wastes by the industries and household. A number of lakes have become infested with weeds and solid wastes.

Another major reason, of choking of many lakes and rivers, is due to sedimentation because of religious customs of immersion of water idols in the lake. The idols are painted with poisonous chemicals, which add to the toxicity of water bodies. It has been observed that Nag River in Nagpur has been given new life in the year 2013 by removing the blockages due to dumping of solid waste by Gutkha companies and other household waste. Now, water flows through it profusely. Similarly, Mahegenco plant had also been fined for dumping fly ash in Kanhan river and had been asked to remove from the water body. The fly ash is being used for useful purpose, to control pollution from the cement plants. Similarly, restriction of dumping of wastes in water bodies can protect the environment through sustainable development and help protect Biodiversity which India can boast about.

The various sources of water pollution are: Marine dumping, sewage and waste water, like industrial waste, plastic bags disposed in the water, Radioactive waste, Oil pollution, underground storage leakages, atmospheric deposition, global warming and eutrophication. Waste that can be utilized, in the industrial processes, should be dumped on the land far away from the natural environment instead of water bodies. Waste from the houses should also be recycled and dumped far away from the city. Nag

River in Nagpur was destroyed by throwing waste in it but, after efforts of the Nagpur Municipal Corporation it was revived. There was a penalty on dumping waste in the river and a CCTV was put there to catch people and fine them heavily. In many parts of India there is a culture of immersing Ganpati, Durga Devi idols and taji's in water bodies. These idols are made from plaster of paris which is non decomposable and reduces dissolved oxygen in the water bodies and chokes them. The paint has poisonous chemicals which add to the toxicity. The idols that are worshipped so fervently are dumped like filth, which choke the water bodies and kill biodiversity. Figures 4–6 project appalling and highly sorry picture of the religious rituals followed by Indians. Moreover, the water becomes toxic and kills biodiversity. Researcher in several parts of India studied the effect of floating God idols in lakes and came to similar conclusion. Reddy and Kumar³ studied lakes in Hyderabad and also came to the same conclusion that floating of Indian Idols destroys biodiversity. A research team sampled water repeatedly from different parts of the Eutrophic Hussainsagar lake (Hyderabad, India): including one spot "immersed with hundreds of multicolored idols of Lord Ganesh and Goddess Durga", and another near "the outfall of black-coloured, untreated raw sewage containing a collection of industrial effluents". Sewage, they conclude, accounts for most but not all of the pollution. High levels of zinc, calcium and strontium "were probably due to the immersed idols painted with multicolours"¹. Shukla⁴, also studied several lakes in Bhopal and pointed at the toxic impact of immersing idols and taji's.



3a.

3b.

Figure 3a and 3b. NRS scientists say the pictures indicate that the glacial regions above Kedarnath had received fresh and excess snowfall when heavy rainfall hit the region².



a



b



c

Figure 4. (a,b,c). Multicolored idols of Lord Ganesh.



Figure 5. Waste after immersion of Idol of Lord Durga Kolkotta.



Figure 6. Immersion of idols in Ganges Kolkotta India.

A similar study of sample in Tapi river in Surat Gujrat, India reveals “at morning hours during pre-immersion, during immersion and post-immersion periods of Ganesh idols”. The conclusion: the “main reason of the deterioration of water quality... is various religious activities”, with special blame given to “the plaster of paris, clothes, iron rods, chemical colours, varnish and paints used for making the idols⁶”.

There are a number of NGO’s working along with Media in Nagpur, India to protect water bodies from this religious activity of immersing idols and taji’a’s. A major step that was taken was to put artificial tanks (Figure 7) for immersion of idols, restricting the construction of POP idols by bringing legislation and promoting use of eco friendly idols.

Times of India had staged road shows and in Ganesh Pendants in Mumbai for promoting the use of eco-friendly Ganesh idols (Figure 8).

A number of countries have made a move to reduce the ever increasing environmental problems by forming meaningful legislations. Yet global climate change, rapidly decreasing biodiversity and growing extinction rates, dwindling resources, deforestation, worldwide over fishing, and pollution still remain a challenge and a serious threat to the environment.

Environmental issues are closely linked to human rights, animal protection, and economic and political issues. For example, starting polluting industries in poor neighborhoods is both an environmental and social justice issue. Another, global issue is the burning of fossil fuels which leads to pollution, acid rain, and climate change. These problems, in turn, lead to poor human health and increase in weather-related disasters. Natural resources ownership by multinational corporations, e.g. water, causes shortages—for humans and animals alike – and contributes to poverty. Spreading of urban boundaries leads to decreased biodiversity and habitat which in turn, increases competition for limited



Figure 7. Artificial tanks for immersing idols during Ganesh Chaturthi 2013.



Figure 8. Times efforts in promoting use of eco-friendly Ganesh idols in Mumbai 2013.

space and resources. All of us depend on the natural resources for our survival, so every environmental issue becomes an issue for both humans and even of animals.

2. Challenges being Faced by India

Wikipedia quotes: “Major environmental issues are forest and agricultural degradation of land, resource depletion (water, mineral, forest, sand, rocks etc.) environmental degradation, public health, loss of biodiversity loss of resilience in ecosystems, livelihood security for the poor”.

India must wake up to face the challenges to control the pollutants coming from the rampant burning of fuel wood and biomass such as dried waste from livestock as the primary source of energy. Poor organized garbage and waste removal services, poor sewage treatment operations, lack of flood control and monsoon water drainage system, diversion of consumer waste into the rivers, cremation practices near major rivers, highly polluting old public transport, and continued operation by the Indian government of government owned, high emission plants built between 1950 to 1980.

India's water supply and sanitation issues are inextricably linked to many environmental issues. Environmental issues are one of the primary causes of disease, health issues and long term livelihood impact for India.

3. International Conventions

Summits such as the Earth Summit in Rio, Brazil, 1992, were major international meetings that brought sustainable development to the mainstream. However, the record on moving towards sustainability, so far appears to have been quite poor since the concept of sustainability has many different meanings to different people, and a large part of humanity around the world still live without access to basic necessities.

4. IT and Conservation of Biodiversity

IT companies can play a major role by creating eco friendly digital idols and providing simulated rich experience not only to the individuals, but also to the entire congregation. Baby steps in these directions have been taken by creating digital idols, but a major thrust as far as advertising it and giving a community experience is still necessary.

5. Conclusion

The tragedy at Kedarnath and new life to Nag river in Nagpur has given lessons of life. The lesson learnt is that careful planning of

tourist areas unauthorized construction and over exploitation of resources should be avoided. Nag River's revival has given new life to a number of biodiversity and to people living in the area. Idols should be made from eco friendly material painted with food or natural colors. Idols should be immersed in Artificial lakes. Steps taken for sustainable growth can salvage us from the denigration of the earth. Every individual should become responsible and take measures to reduce carbon footprints. Innovation and research before its implementation should focus first on the negative impact that it will have on the environment, the people and biodiversity.

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