

ROLE OF LAW ON THE CRISES FACED BY THE ENVIRONMENT DUE TO TECHNOLOGICAL GROWTH

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Introduction

As we know our world is a heaven comprising several living beings and sustaining for millions of years. When we talk about environment it includes everything around us. The total sum of surrounding with all living and non-organisms includes all ecological communities such as air, water, soil, rocks, trees, birds, animals, humans, insects and so on which are the complex of all physical, chemical and biotic factors. The environment includes all natural resources and physical phenomena like naturally existing minerals, energy, climate, weather, radiation, electrical charge. The environment is moulding by the humans for their better life standard that is by replacing the complex natural environment into simpler human environment. We the people by knowing the needs of our environment and are showing signs of willingness to make a change. Due to the advancement in the field of science and technology it has a great impact on our environment, there are positive as well as negative impacts. As we aware of the constant changing of our environment due to human activities we are facing different issues like natural disaster, change in weather periods, global warming. Daily we are challenging different environmental problems in which some may be small affecting few ecosystem and some are drastically changing the landscapes. By knowing the complex situation, the government all over the world are initiating lot of measures to protect of environment by concerning not to affect the field of technology.

Impact of Technology on Environment

As there is rapid growth in Science and technology, it has great impact on the environment. Technology have impacts on growth of cities and improvement of better life. There are positive impacts like increase in job opportunities, making people more social and so on. On other side negative impacts like environmental degradation due to industrialization in developed countries, environmental pollution as result of waste output, global warming, depletion of natural resource and ecological imbalances resulted from technology.

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Two (2) major issues covered are

1. Cell phone tower and its harmful radiation impact to the environment
2. Illegal sand mining and its impact to the Environment

Cell phone tower and its harmful radiation impact to the environment

As we are exposed to 100 million times more electromagnetic radiation compared to our previous generation, and the reason is radiation from cell phone towers and microwave antennas. Human population are centered with massive amount of hazardous and powerful wireless radiation. The damages are grater when we are closer to emission. Mobile tower antennas are the source of the mobile radiation. Mobile phone tower operating in every region are divided into cells and that are further divided into sectors, mobile phone towers are configured in transmitting different signals into each of these sectors.

Radiations emitted by cell phone tower

All mobile phone tower emitting radiation namely, The Radio Frequency (RF) energy is a non-ionizing radiation like radiation from visible light, infra- red radiation, and other forms of electromagnetic radiation with relatively low frequencies. Cell phone is a very, very low level of radio frequency energy. This type of non-ionizing radiation does not cause damage to chemical bonds or DNA. The high frequency radiation emitted by cell phone towers travel as far as 45 miles over level terrain.

Consequences of Radiation

The emitting radio frequency radiations are the part of spectrum of electromagnetic waves, which causes health issues like:

- Headaches
- Memory loss
- Cardiovascular stress
- Low sperm count
- Birth defects
- Cancer

Impact of radiation on Birds

The mobile tower radiation causing harmful effects to human, birds and animals, said birds, including sparrows, honey bees and peacocks are severely affected. The radiation impinges the body molecule and vibrates at a speed of 900 million per second for GSM900 and 1,800 million per second for GSM1800. These vibrations cause DNA damage and produce heat. Long-term exposure to low level RFR has damaging effects on the nervous system and immune system of small animals.²

Birds act as good ecological indicators for low-intensity electromagnetic radiation, as they have thin skulls and their feathers can act as dielectric receptors of microwave radiation. There are many species using magnetic navigation and microwaves which interfere with their sensors and misguide them while navigating and preying. As per the studies conducted in the Punjab University the ill-effects of electromagnetic radiation (EMR) emitted by cell phone masts on birds and damages bird's eggs and embryos. Peacocks are much more pronounced as its wings/feather occupy more surface area resulting in large absorption of radiation, and hence, creating more health hazards leading to various ailments and even death.

According to a survey in 2010, the number of house sparrows has declined in coastal areas, including Kerala, by 80% and by 2003 the sparrows had almost disappeared from the capital city. However, a survey by Travancore Natural History Society in 2012 in Thiruvananthapuram had identified about 300 sparrows, mostly around granary stores and market yards.

The reason for disappearance of house sparrows are

- Rising air temperature
- Vanishing open grass lands
- Emission of methyl nitrite which are highly toxic for insects that forms the major part of diet for sparrows
- Usage of garden pesticides

Radiation limits and regulations: A global scenario

Based on the studies conducted the emission of radiation from mobile tower causing health hazards and the precautionary measures formulated by Department of Telecom(DoT),

² www.i-sis.org.uk/MPVB.php

Government of India, based on International Commission on Non-Ionizing Radiation Protection (ICNIRP) guidelines (issued by Germany & adopted by UK, Australia, Malaysia, India and Korea).

Legislative measures

There are Indian legislation enacted regarding the control of radiation from mobile tower.

The Indian Wireless Act, 1933 says about Radio waves or Hertzian waves means electromagnetic waves of frequencies lower than 3,000 gigacycles per second propagated in space without artificial guide.

The Telecom Regulatory Authority of India Act, 1997 says about the transmission or reception of signs, signals, writing, images and sounds or intelligence of any nature by wire, visual or other electro-magnetic emissions, radio waves or Hertzian waves, galvanic, electric or magnetic means. In India, mobile tower radiation testing and monitoring is regulated by Telecom Enforcement Resource and Monitoring (TERM) cell of Department of Telecommunications (Ministry of Communication and Information Technology).³

Steps taken by Environment Ministry

The Ministry of Environment and Forest (MoEF) asked the Department of Telecommunications (DoT):

- Not to allow new mobile towers to be constructed within a one-kilometre radius of the existing towers.
- New towers should not be permitted within a radius of one kilometre of the existing towers.
- Any new towers do not obstruct the flight path of birds, or increase the combined radiation of all towers in the area.
- Put in GIS mapping to help monitor the population of birds and bees or the welfare of animals in protected wildlife areas.
- Do not install any towers near zoos or any wildlife protected zones without consulting Forest Dept.

³ Note-Mobile-Tower-Radiation-UPCP-Div.pdf

- All telecom service providers (TSPs) / mobile service providers (MSPs) are governed by the Terms & Condition of Licenses issued by Department of Telecom and they should ensure that radiation from mobile towers is within the prescribed limit. For this, all TSPs are bound to submit the self- compliance certificate of all the mobile tower installations on bi-annual basis to ensure radiations are within stipulated limits.

Illegal sand mining and its impact to the Environment

Sand is the naturally existing resource in the environment and is an important economic resource composed of finely divided rocks and mineral particles. Sand act as the major ingredient and used long with cement, water, gravel and steel for manufacturing concrete, joint filling and plastering. The economic value of the sand depends on its demand for use as raw material and various other uses. Sand available at the river channel and floodplain constitutes an important raw material in construction industries. By knowing the special features of the sand, there are many illegal activities are carried out for economical aspect through extraction and which is known as the sand mining. Sand mining means the extraction of sand from open places like sand dunes, beaches and even dredged from river and ocean beds. Due to the great demand for the sand by the constructing sectors illegal extraction of sand raised.

Illegal sand mining

Due to the decline of inland resource sands are extracted from land quarries, riverbeds, marine and coastal areas River and marine aggregates are now the main sources for building and land reclamation. These areas are restricted by the government for sand mining. The sand mining is illegal when there is breach of some regulations in place regarding location, scale and permission granted by the government.

Consequences faced

- All this sand mining has some disastrous consequences for the environment
- It has major impact on river, delta, costal and marine ecosystem
- The removal of sand has serious effect on wildlife like sea turtles, gharials need sand banks for their nests and because of sand mining these habitats are destroying and partly extinct
- The practice directly causes land erosion.
- Removes physical barrier and causes flooding

- Damaging of underwater sand due to sand mining makes it highly turbid and potentially killing off large numbers of some species.
- sand mining results in loss of land through river or coastal erosion, lowering of the water table and decreases in the amount of sediment supply.

The salient features of the Guidelines issued by Ministry of Environment and Forest and climate ,2016 relating to regulation of sand mining follows

- To ensure that sand and gravel mining is done in environmentally sustainable and socially responsible manner.
- Implementing safeguards for checking illegal and indiscriminate mining.
- Monitoring system for sustainable sand Mining.
- To improve the effectiveness of monitoring of mining and transportation of mined out material.
- Ensure conservation of the river equilibrium and its natural environment by protection and restoration of the ecological system.
- Ensure the rivers are protected from bank and bed erosion beyond its stable profile.
- Streamlining and simplifying the process for grant of Environmental Clearance (EC) for sustainable mining.

Illegal Sand Mining: Steps taken by Government of India

According to the Geological Survey of India (GSI), riverbed mining causes several alterations to the physical characteristics of both a river and riverbed. These can severely impact the ecological equilibrium of a river and damage plants, animals and riparian habitats. The GSI has issued guidelines to address the massive damage that riverbed mining can cause, including lowering the groundwater table in a floodplain. Excessive pumping out of groundwater during sand mining, especially in abandoned channels, generally results in depletion of groundwater resources causing severe scarcity and affecting irrigation and potable water availability.

In February 2012, the Supreme Court of India ruled that approval under the 2006 Environment Impact Assessment (EIA) notification is needed for all sand mining and gravel collection activities, even if the area being mined is less than 5 hectares (12.5 acres). It also made some critical observations related to environmental impacts of sand mining.

Then in May of 2012, the Ministry of Environment and Forests (MoEF) issued an order mandating compliance with the Supreme Court's February 2012 judgment and directing that permissions be sought for all mining activities. These permissions must come from the respective State Environment Impact Assessment Authorities (SEIAA) constituted under the 2006 EIA notification.⁴

The Minister of State (independent charge) for Power, Coal, New & Renewable energy and mines

The State Governments brought to the notice of the Ministry that the legal framework to curb/stop illegal sand mining exist in their respective States.⁵

Section 3(e) of the Mines and Minerals (Development and Regulation) Act, 1957 MMDR Act defines "minor minerals" means building stones, gravel, ordinary clay, ordinary sand other than sand used for prescribed purposes, and any other mineral which the Central Government may, by notification in the Official Gazette, declare to be a minor mineral;

Section 15 of the MMDR Act provides that State Governments have framed their own minor minerals concession rules for regulating the grant of mining leases or other mineral concessions in respect of minor minerals and for purposes connected therewith.

section 23C of the MMDR Act, 1957 empowers State Governments to make rules for preventing illegal mining, transportation and storage of minerals (both major minerals and minor minerals) and for purposes connected therewith. Control of illegal mining is, therefore, under the legislative and administrative jurisdiction of State Governments.

The MMDR Act, 1957 was amended through the MMDR Amendment Act, 2015 which came into effect from 12th January 2015. The Amendment Act has effective provisions for restricting illegal mining. Illegal mining has been made punishable with imprisonment for a term which may extend to five years and with fine which may extend to five lakh rupees per hectare of the area. Provisions have been made for setting up of Special Courts for providing speedy trial of offences relating to illegal mining.

⁴ iasscore.in/national-issues/illegal-sand-mining-steps-taken-by-government-of-india-

⁵ Mines and Mineral Development and Regulation Act 1957, Government of India ministry of mines

Conclusion

The need and greed of humans has increased several folds, this lead to the exploitation of the entire universe. Only very few individuals realized the impact of over exploitation and the clear majority is not much aware of the price they will pay. If this situation continues, the ecological balance will shift resulting in catastrophes such as acute water scarcity, global temperature raises, resulting in ocean level rise and submerging of the low-lying areas, new diseases will be born etc. It's never too late to correct the mistakes, the best option is to force people using law, by implementing strict rules and severe punishments, the above-mentioned problems could be kept under control. Governments should always keep check on the growing technology and its impact to the planet, if required law should be created and implemented to preserve the nature and mankind. The Nature don't need us to thrive but we need nature to live.