Land Pollution and its Legal Control in India

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Starting from the point my day begins till it ends I witness activities which lead to land pollution. Whether its behind the hostel where all the waste from the mess including food, vegetables, plastics, containers are dumped and burnt at times to the canteen where people just throw away the plastic cups, plates, packets of packaged food and drinking items here and there.

"The automobile has not merely taken over the street, it has dissolved the living tissue of the city ... Gas-filled, noisy and hazardous, our streets have become the most inhumane landscape in the world." James M. Fitch.

INTRODUCTION:

Pollution is generally viewed as a land-based phenomenon and it is from the fact that most pollution is generated on land. Even the pollution of the air (for example, acid rain) is largely generated on land. The term land pollution cannot be defined due to the comprehensiveness involved with the same. Interestingly, land pollution is something which is entirely overlooked and hence, is not being dealt specifically by any statute or defined in some statute. The question now arises is what is meant by land pollution? Whether land pollution has no legal control in India? What happens in case an enterprise activities lead to land degradation – are they just left without liability? The answer to all these questions again lies in the grey area of the Indian law, where nothing is ascertained with certainty. Land pollution may be explained as de-spoliation of the landscape human being survives on.[1] The irony is that land is recognized as an important component of environment as defined in section 2(a) of the Environment Protection Act (EPA), 1986 but the act nowhere deals in detail with land pollution. Land pollution can be defined as "*any physical or chemical alteration to land which cause its use to change and render it incapable of beneficial treatment without treatment.*"[2] Alternatively, it may be defined as "*misuse of land, disuse of land, and chemical contamination of land*"[3] This was just an attempt to provide the scope of land pollution. It includes a wide area of activities which is dealt in the late half of the article. The authors further deals with the causes and effects of the land pollution.

CAUSES AND EFFECTS:

Land pollution is majorly caused due to dumping and improper disposal of industrial and domestic waste along with semi-solid waste resulting from agriculture. Out of all this dumping of industrial waste and municipal solid wastes not only seriously affects the productivity of the land but also affects the purity of the ground water by letting toxic substances leach and seep into the soil, and further are the major sources of land pollution. Municipal solid waste is another major reason for pollution. It consists of both commercial and domestic wastes including dried sludge and sewage. It also includes refuse which mainly contains garbage including food wastes, rubbish like papers, glasses, metallic cans, plastics etc. It also includes hazardous substances like aerosol cans, batteries, electronic gadgets, bleaches, chemicals and solvents, empty containers, light bulbs, tubelights, medicines, paints, oil, pesticides etc. The waste management in India is extremely deficient. Municipal solid waste and even bio medical waste is thrown on the streets, water bodies and drains. Since agriculture is becoming more and more intensive large quantities of fertilizers, pesticides, herbicides and other chemicals are used which affects not only the land by changing the properties of the soils but the ground water as well. Mining is another reason for land pollution.

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[1] Shantkumar, 'INTRODUCTION TO ENVIRONMENTAL LAW' (2nd Ed., 2009) p 207.

[2] *Id.*

[3] *Id.*

Radioactive material from atmospheric fall out in nuclear explosions, radioactive materials emitted by nuclear implosions and radioactive waste from laboratories, industries and power plants. The excreta of human beings, animals, birds along with faulty sanitation, accumulation of waste water also includes land pollution.

Dumping waste in the oceans is known as “Ocean dumping' which includes pollution or pollutants generated on land to be transported to the ocean for disposal. Ocean dumping in the territorial sea, economic zone, or continental shelf area without the permission of the coastal state is prohibited. Recyclable waste is also not segregated but thrown around in the same manner.

Another cause of land pollution is deforestation. Forest plays a very vital role in maintaining a balanced ecological system, helps in conservation and formation of soil, influence solar radiation and helps in absorb carbon dioxide. Deforestation lead to loss of bio diversity and all the functions performed by forests. The ***Forest Conservation Act 1980*** was enacted to help conserve the country’s forests. It strictly restricts and regulates the de-reservation of forests or use of forest land for non-forest purposes without the prior approval of Central Government. To this end the Act lays down the pre-requisites for the diversion of forest land for non-forest purposes.

There are enormous numbers of effects of land pollution. It leads to a zillion diseases along with diseases transmitted by rodents and vector insects. Much of the pollution generated on land, however, is intentionally discharged or eventually migrates into river systems leading to water pollution. Approximately eighty percent of the pollution that enters the marine environment also originates from land-based sources.[4] Urban expansion of coastal areas has increased the amount of land-based pollution entering oceans and seas worldwide.[5] Land-based pollution negatively affects bodies of water and aquatic species in several ways. "Eutrophication is a condition in an aquatic ecosystem where high nutrient concentrations stimulate blooms of algae"[6] which disturb the functioning of marine ecosystems." by the creation of dead zones--"areas of water that are too low in dissolved oxygen to sustain life." Land pollution has its own effects but more importantly, it leads to other kinds of pollution such as water, air etc and hence, needs to be regulated.

Moreover, public is exposed to high level health risks. Unscientific disposal of the waste also pollutes ground water resources. It can affect wildlife, plants, and humans in a number of ways, such as to cause problems in the respiratory system, problems on the skin, birth defects and can cause various kinds of cancers. The toxic materials that pollute the soil can get into the human body directly by coming into contact with the skin, being washed into water sources like reservoirs and rivers, eating fruits and vegetables that have been grown in polluted soil and breathing in polluted dust or particles. All these for a healthy and livable environment are required to be regulated as it was said in the case of *Francis Corallie* that life is not mere animal existence. It means to live life with dignity and a right to health environment.

LEGAL CONTROL AND JUDICIAL RESPONSES

There is no specific legislation which deals in regulation of land pollution or which gives it a definite scope and meaning. Unlike water pollution, air pollution, deforestation etc having a specific statute to govern, land pollution is in general being touched upon by the Environmental Protection Act. EPA comprehensively deals with all aspects of environmental problems. The act defines in section 2(e) "hazardous substance" as *any substance or preparation which, by reason of its chemical or physico-chemical properties or handling, is liable to cause harm to human beings, other living creatures, plant, micro-organism, property or the environment.* The act requires the person handling the substance according to the procedure laid down.[7] The act provides Central Govt the power to form rules and procedures to deal with such hazardous substances.[8] Acting on such powers there are rules enacted

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[4] Lakshman Guruswamy, ‘INTERNATIONAL ENVIRONMENTAL LAW IN A NUTSHELL’ (1997) p 227.

[5] *Id.*

[6] Laura M. Schaefer, ‘*Developments In Land-Based Pollution In 2004*’, 2004 Colo. J. Int'l Envtl. L. & Pol'y 183

[7] Section 8 of Environmental Protection Act, 1986.

[8] Section 6 and 25 of Environmental Protection Act, 1986.

by the Govt relating to hazardous waste, chemical accidents, bio medical waste, municipal solid waste, batteries, ozone depletion etc.

India has been a party to various international documents like Rio Declaration[9] and Stockholm declaration[10] where the concept of sustainable development was adopted and emphasized upon. In order to ensure that regulation is necessary, but it is evident from the lack of any legal control over land pollution that the principle is ignored. How can the future development be made sustainable? How can such problems be dealt in absence of a stringent legislation?

Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008: It provides that the occupier shall be responsible for the safe and environmentally sound handling of such substances generated in his establishment.[11] The hazardous waste generated shall be sent to a recycler or reuser or reprocessor registered or authorized or should be disposed off in an authorized disposal facility. An authorization from the state pollution control board has to be obtained for everybody who is dealing with such substances in any manner.[12] On satisfaction of having the equipments and facility of treating such substances and verification of various certificates and documents required, the pollution control board can reject or accept it.

Rule 13 prohibits import of hazardous substances for disposal purpose. Import of any such substance is allowed only for recycling or recovery or reuse. Export of such things has to be done with prior informed consent of the importing state to ensure environmentally sound management of the same along with the examination of the state pollution control board. No import or export is allowed for substance listed in schedule IV but wastes mentioned under schedule III shall be regulated as provided in the rules. If the procedure above is not followed or consent is obtained by fraud or shipping details are not confirmed with or if any international or national law in violated. In case of such a situation the waste has to be re-exported within 90 days at the own cost of the doer and implementation is ensured by the pollution board.

Rule 18 provides for state Govt, occupier, operator or any association of occupiers shall individually or severally be liable for management and establishing the facility of treating the wastes. Facilities should be set up according to the guidelines issued by the central pollution control board and shall obtain approval from the pollution board. The rules provides for caution to be taken for packaging[13], labeling and transport[14] of hazardous substances. Rule 25 of the rules incorporates the polluter pays principles and makes the user liable for all damages caused to the environment as well as the third party due to improper handling and making him liable to financial penalties under rules by pollution control board.

In ***Suo Motu v Vatva Industries Association*** [15] certain industries dealing in hazardous waste was dumping waste near a village. Noticing this environmental engineer of Gujarat Pollutin Board sought direction from the court for abatement of such activities. The court said that board and officer are independent people and need not need court orders to act for protection of the environment. In the case of ***Indian Council for Enviro-Legal Action v UOI***[16], the judgment was related to the toxic chemical wastes deposited from an industry in the village of Udaipur. The sludge deposited in areas adjoining those industries made the soil reddish and ground water highly polluted. It has become unfit for cattle to drink and for irrigating the land. The soil has become polluted rendering it unfit for cultivation, the main stay of the villagers. The court ordered closure of the industry and were directed to pay compensation based on polluter pays principle. In ***Pravinbhai Jashbhai and Ors.***

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[9] Principle 4

[10] Principle 1

[11] Rule 4

[12] Rule 5

[13] Rule 19

[14] Rule 20

[15] AIR 2000 Guj 33

[16] AIR1996SC1446

v. State of Gujarat and Anr[17], Silver Chemicals is stated to have produced 375 MT of 'H' acid. Whatever quantity these two units may have produced, it has given birth to about 2400-2500 MT of highly toxic sludge besides other pollutants. Since the toxic untreated waste waters were allowed to flow out freely and because the untreated toxic sludge was thrown in the open in and around the complex, the toxic substances have percolated deep into the bowels of the earth polluting the aquifers and the sub-terrain supply of water. It has become unfit for cattle to drink and for irrigating the land. The soil has become polluted rendering it unfit for cultivation, the main stay of the villagers.

These rules deal with any hazardous substance whether in solid, liquid or gaseous state. It does not specifically deals with land pollution but if any hazardous substance leads to activities like dumping, land filling etc which leads to land pollution then it is applicable.

The Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989: The rules provides for the occupier to prove that he has identified the major accidents and to limit consequences to person and the environment. If any major accident happens it has to inform the concerned authority and requisite information has to be send to the Ministry of Environemet and Forestry.[18] The occupiers of both new and existing industrial activities shall carry out an independent safety audit of the respective industrial activities with help of expert, not associated with such industrial activities.[19] On site emergency plan containing details as to how major accidents will be dealt with has to be made,[20] including specifications like person to be made responsible for safety on the site etc. In case of new industry this plan has to be drawn before hand. The concerned authority is liable for an off site emergency plan to manage any probable accident on that site.[21] The occupier for this purpose has to provide the authority with all kinds of information. It's a duty on the occupier to inform the persons outside the site who are likely to be affected by a major accident.[22]

These rule also applied to import of those chemicals, which satisfy criterion laid down in Part I of schedule 1 or listed in column 2 of part II of schedule 1. Certain information has to be provided before importing like details of person receiving the consignment, port of entry, mode of transport, quantity etc. Concerned authority on being satisfied on absence of any environmental threat lends the permission.

These rules helps in preventing any major accident leading to adverse effects on environment and land pollution is one of them, which is again not dealt wit specifically. These rules are for protecting '*any*' kind of pollution arising out of storage, manufacture and import of the waste.

The chemical Accidents (Emergency Planning Preparedness and Response) Rules, 1996: These rules are basically to supplement the Hazardous chemical Rules of 1989. This requires the state as well as the center to constitute "crisis groups" at the national, state, district and local levels who will be responsible for dealing with any major accidents.

Hazardous Micro-Organism Rules 1989: This is to regulate the manufacture, use, import, export, storage of hazardous micro-organisms and genetically engineered cells. This covers research institutions, hospitals, industry and other establishments which handle such substance. Under these rules various safety guidelines have been provided. The rules deal with protection of any kind of environmental harm due to this, including land pollution. If any genetically engineered plant is grown, which leads to soil degradation, or any other kind of land degradation then these rules are applicable.

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[17] (1995)2GLR1210

[18] Rule 5

[19] Rule 10

[20] Rule 13

[21] Rule 14

[22] Rule 15

Bio-Medical Waste (Management and Handling) Rules, 1998: ***"Bio-medical waste"*** *means any waste, which is generated during the diagnosis, treatment or immunisation of human beings or animals or in research activities pertaining thereto or in the production or testing of biologicals, and including categories mentioned in Schedule I. It contains Human Anatomical Waste, animal Waste, Microbiology & Biotechnology Waste, Waste sharps, Discarded Medicines and Cytotoxic drugs, Solid Waste, Liquid Waste, Incineration Ash and Chemical Waste.* These rules are enacted to regulate through a licensing and reporting system the bio medical waste generated by hospitals, clinics, blood banks and other organization. It is the duty of the occupier to ensure that such waste does not have any adverse effect on the environment or human health[23] and he has adequate facilities for disposal.[24] Schedule 1 provides with different methods for disposal of such wastes like incineration, deep burial, local autoclaving, micro waving, mutilation, disinfection, chemical treatment etc. Such waste should be segregated from normal waste.[25] If any waste has to be kept for more than 48hrs special permission of the prescribed authority needs to be taken. i.e state pollution board for states and for UT's central pollution board. In the case of ***Dr. W L Wadhera v UOI***[26] the petitioner sought direction to municipal corp of delhi to perfom their statutory duty for management of bio medical waste. They argued non availability of funds. The bio medical waste was disposed on the roads and treatment was improper leading to adverse effect on environment. These rules ensure proper treatment of the biomedical waste preventing any type of land pollution and adverse effect on the public.

Plastic Manufacture Sales and Usage Rules, 1999: These rules are enacted to prohibit the use of carry bags or containers made of recycled plastics for storing, carrying, dispensing or packaging of foodstuffs. These rules further prescribe conditions for manufacturing of carry bags and containers of plastics. No person should engage in manufacturing of plastic bags less than 8 * 12 Inches in size[27] and min. thickness of 20 microns[28]. No vendor should use such plastic bags for storing, carrying, dispensing foodstuffs. ***Wing Commander Utpal Barbara v State of Assam***[29] the unregulated disposal of polythene bags by members of general public was sought to be controlled by the magistrate u/s 144 CrPC. The court if State govt considers that a total ban is required then excercising the power[30] they can make rules. Consequently, Recycled Plastics Manufacture and Usage Rules, 1999 was enacted for regulation of disposal of plastic bags.

The Municipal Solid Waste (Management and Handling) Rules, 2000: Municipal Solid Waste includes commercial and residential wastes generated in municipal or notified areas in either solid or semi solid form excluding industrial hazardous waste but excluding treated bio-medical wastes.[31]

These rules apply to every municipal authority responsible for collection, segregation, storage, transportation, processing and disposal of municipal waste. Such waste should be handled as laid down in schedule II of these rules. Littering and spilling of such waste in the cities, town and in urban areas is prohibited. For this purpose there should be a house-to-house collection of municipal wastes, devising collection of waste from slums and such areas including hotels, offices and commercial areas, collection of waste from slaughter houses, meat & fish markets, vegetable markets should be devised, segregation of municipal waste form other kinds, construction waste shall be separately collected, waste shall not be burnt. In ***Almitra H Patel v UOI***[32] the court ordered the scheme of "*swachha Bangalore*" involving separation of recyclable waste/non-biodegradable waste as well as domestic hazardous waste at source by means of door-to-door collection by municipal workmen. The vehicle used during transportation of such waste should be covered so as

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[23] Rule 4

[24] Rule 5

[25] Rule 6

[26] (1996) 2 SCC 594

[27] Rule 4

[28] Rule 8

[29] AIR 1999 Gau. 78

[30] Section 3(2) read with Section 25 of Environmental Protection Act, 1986.

[31] Rule 3(xv)

[32] (2000) 8 SCC 19

to prevent scattering of wastes on the land. Municipality should adopt recycling methods or combination of such technologies so as to minimize burden on landfill. Landfill is allowed for non-biodegradable substances, inert waste and other waste not suitable either for recycling or for biological processing. Land filling of mixed waste should be avoided unless the same is found unsuitable for waste processing. In the case of ***C Uma Devi Govt of AP***[33] the corporation converted a park into a garbage dumping yard. The court declared the action in contravention to Municipal Solid Waste (management and Handling) Rules 1999. The court ordered to bring the park back to normal.

This is one of the few rules which deals with land pollution but the drawback is that it deals with only one of the cause of the same. Though this kind of waste i.e. solid waste results into maximum land pollution.

Batteries (Management and Handling) Rules, 2001: These rules shall apply to every manufacture, importer, reconditioner, assembler, dealer, recycler, auctioneer, consumer and bulk consumer involved in manufacture, processing, sale, purchase, and use of batteries or components thereof. [34] *Battery is defined as lead acid battery which is a source of electrical energy and contains lead metal.*[35]This lays down certain requirements like collecting back the batteries sold, ensuring segregation of same batteries together, ensuring sending of such batteries only to registered recyclers, ensure awareness amongst public and environmental protection.[36] For the consumer, it clearly lays down to ensure proper disposal of the same by depositing them back at designated collection centers.[37] This prevents throwing of dangerous substances in the open area leading to land pollution. Even after such rules are enacted maximum no. of people esp. the consumer has been throwing the batteries in there dustbin which is ultimately dumped in the dumping zone. The need to the hour is effective implementation of the rules.

Moreover, the 74th amendment in the constitution was inspired to give constitutional status to the local bodies and to provide with function like urban planning, regulation of land use, slum improvement, urban poverty alleviation etc. This made it a fact that municipalities have a mandatory duty to protect the people from environmental hazards. It is basic responsibility of the local bodies to ensure sanitary management, cleaning of streets, roads, removing filth, garbage management, providing drainage system etc.[38]

In ***Ajay Constructions v Kakateeya Nagar Co-op Housing Soc Ltd***[39] the drainage pipe was attached underground to a pipeline meant only for rain water and cattle wash. The court held that this lead to nuisance as it lead to damage to land as well as to water and ordered the municipality to disconnect both. In ***Ashok Dey v State of WB***[40] dumping garbage was termed as nuisance.

In March 2009, the issue of Uranium poisoning in Punjab came into light, caused by fly ash ponds of thermal(uranium)power stations, which reportedly lead to severe birth defects in children in the Faridkot and Bhatinda districts of Punjab.[41] It caused contamination of soil and ground water in Malwa region of Punjab. After the controversy came into media, the Government of Punjab in April 2009, ordered a probe into the matter, and a series of tests with the Bhabha Atomic Research Centre, Trombay, was done and stated that there is no side effect of the same. The government attributed the abnormalities to genetic disorders. The local media, however blamed the government

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[33] AIR 2001 AP 460

[34] Rule 2

[35] Rule 3(e)

[36] Rule 4, 5, 7 , 8 , 9

[37] Rule 10

[38] *Municipal Council, Ratlam v Vardhichand* AIR 1980 SC 1622

[39] AIR 1991 AP 294

[40] 93 CWN 1052D

[41] Chamberlain, Gethin (30 August 2009). "India's generation of children crippled by uranium waste". *The Telegraph* (London). http://www.guardian.co.uk/world/2009/aug/30/india-punjab-children-uranium-pollution. as accessed on 15.10.10.

for the absence of proper norms to monitor the environmental impact of ash ponds, and lack of proper study of the prevalent uranium contamination in the region.

SUGGESTIONS AND CONCLUSION

There are certain suggestions which the author would like to give. They are:

- A specific legislation which deals with land pollution in detail should be enacted.
- It needs establishment of requirements for phasing out of inadequate over-the-water toilets, requirements for wastewater treatment at tourist accommodations and service facilities.
- Training should be developed for pesticide importers, retailers and users.
- Coastal management plan should be established based on local conditions and experiences.
- Building expanded environmental awareness programs and groups based on existing campaigns like the recycling program is necessary.
- Provide community solid waste disposal containers in communities at convenient locations with assurance of adequate pickup and disposal. Establish sewage treatment for growing "urban" areas.
- Organic waste matter should be disposed in areas that are far away from residential places. Inorganic matter such as paper, plastic, glass and metals should be reclaimed and then recycled. Both these type of wastes should be segregated

Land pollution is totally neglected in India as it is a problem which does not have a solution or regulation anywhere in the zillions of law enacted. There are various serous effects of land pollution which are being discussed by the author but nobody seems to be taking it seriously. This may be because, the effects of land pollution is not spontaneous. It effects in long run. The seriousness of the problem has to be understood not only by the legislature and judiciary but by the public themselves.