REGULATION OF LAND POLLUTANTS AND SOLID WASTE DISPOSAL

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Summary

The article describes the principles of regulations to prevent land contamination and also the owners' liabilities to decontaminate land. Lands are usually contaminated by waste and, hence, a discussion on waste disposal regulations has been included. Waste disposal regulations stress on duty of care and require that any body handling waste must be authorized to do so by the competent authority; issuance and holding of such license is subject to conditions set out in the regulations.

1. Introduction

Pollution of land by industrial processes and uncontrolled waste disposal has led to the contamination of large areas in every country. So far as land pollutants are concerned, these come from many sources, such as deposition of air-borne pollutants on the land, unregulated discharge from industrial processes, accidental escape during storage, transport, disposal and use of hazardous substances, and also from uncontrolled discharge of leakage at waste handling sites, such as land fills, incinerator plants, etc. Therefore, regulation of land pollutants should start with regulation of air and water pollutants and hazardous substances, installation of a regime for controlling discharges of pollutants from industrial facilities, and adoption of appropriate preventive measures to eliminate or reduce escape of pollutants during the different handling processes in the waste cycle, with appropriate duty of care.While the preventive regulatory practices are in place as a result of development of environmental law since the 1970s, the legacy of the past remains. There are very large areas of contaminated land and these need to be

returned to productive use after remediation. The question of who shall pay for remediation of the land has remained an open question. Also the question is often asked regarding the degree of remediation which should be aimed at. Although voluntary remediation and use of economic instruments are being encouraged, the degree of efficacy varies between different socioeconomic conditions, and mandatory regulations are needed. Prior to any discussion of waste disposal, it is required to understand the meaning of the word "disposal". The ordinary meaning of this word is "getting rid of something" and this implies a final disposal, since an article, e.g. a car, can be regarded as being disposed of if it is destroyed or if it is passed on from one person to another. Legislation often simply lists the operations that are to be taken to constitute disposal. For the purpose of this topic, waste disposal is considered to be the last handling process in the waste handling chain prior to its final deposition. Such operation may include landfill, incineration, surface impoundment, deep injection, release of waste into a water body, permanent storage, blending, repackaging or temporary storage etc.

2. Regulations Dealing with Prevention of Land Pollution

Land may become polluted by the use to which it is put, depending on the concentration and toxicity of substances intentionally or casually placed on the land during use or for disposal. There are a variety of reasons for land contamination, including: former industrial sites (e. g. chemical works, coke ovens, gas works and sewage plants), former waste tips within the boundaries of the defunct processing plants, material stores, disused waste disposal areas, etc. All these are sources of substances which may cause significant harm. Hence, "polluted land" can be defined as land which appears to the competent authority, as defined in the legislation, to be in such a condition, by reason of substances in, on or under the land, that a) significant harm is being caused or there is a significant possibility of such harm being caused; or b) pollution by controlled wastes is being or is likely to be, caused. As can be seen, the primary powers available to prevent land pollution are those governing the treatment and disposal of wastes. Primary precaution is to make it a general offense to deposit or to treat, keep or dispose of controlled waste in or on any land without or contrary to the terms of a waste management license, or to treat, keep or dispose of controlled waste in a manner likely to cause pollution of the environment or harm to human health. If any such waste has been deposited in the aforesaid way in or on any land, the appropriate authority (waste regulation authority or waste collection authority) may serve a notice to the owner of the land and require him within the stipulated period to remove the waste from the land and take steps to eliminate or reduce the consequences of the deposit of the waste. Failure to comply with such notice is an offense and can attract financial sanction. The competent authority, if it is so minded, may without serving notice, take steps to remove such wastes when:

1. Immediate removal of the waste is necessary to remove or prevent pollution of land, water or air or harm to human health, or to eliminate or reduce the consequences of the deposit;
2. There is no occupier of the land, or
3. The occupier neither made nor knowingly permitted the deposit of the waste.

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The cost of removal may be recovered from the occupier of the land or from the person who has made the deposition under specific conditions. If any damage is caused by waste which has been deposited in or on land, any person who deposited it, or knowingly caused or knowingly permitted it to be deposited, in either case so as to commit an offense, is liable for the damage, except where the damage:

1. Was due wholly to the fault of the person who suffered it; or
2. Was suffered by a person who voluntarily accepted the risk of the damage being caused.

One of the most significant forms of control to regulate land pollutants is the criminal duty of care related to handling of wastes until it is deposited safely. The duty of care applies to any person who produces, imports, carries, keeps, treats or disposes of controlled wastes, or who, as a broker, has control of it. The duty of care implies that any such person should take reasonable steps to:

- prevent others down the waste chain from handling the waste through unlawful means;
- prevent the escape of the waste;
- ensure that the waste is transferred only to an authorized person;
- ensure that an adequate written description of the waste is given to anyone to whom the waste is transferred.

The main function of the duty of care is to encourage responsible behavior and the development of appropriate waste management systems to reduce land pollution. Duty of care is connected with carriage of wastes. It is a requirement that all carriers of wastes should be registered and application should be made to the local regulatory authority. The registration may be revoked if the carrier violates certain regulations of carriage or is involved in unlawful disposal operations. One of the major sources of land pollutants is hazardous wastes, sometimes known as special wastes. The wastes which are classified as hazardous wastes are listed in respective waste control regulations. The EC lists nearly 250 classes of such wastes The World Heath Organization defines it as wastes which present:

1. Short term hazards, such as acute toxicity by ingestion, inhalation or skin absorption, corrosivity or other skin or eye contact hazards, or the risk of fire and explosion.
2. Long term environmental hazard including chronic toxicity upon repeated exposure, carcinogenicity (which may in some cases result from acute exposure but with a long latent period), resistance to detoxification processes such as biodegradation, the potential to pollute underground or surface waters or aesthetically objectionable properties such as offensive smells.

If the waste is special waste, a system of consignment note is required, so that the progress of waste may be traced form its place of origin to the place of disposal. Producers of special wastes are required to keep a register of all consignment notes for a stipulated period. It is a criminal offense to violate any such regulations.

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Biographical Sketch

After graduating from Calcutta University (India) in 1967, **Dr. Prabir Ganguly** worked for four years in Indian coal mines in various capacities, rising to the position of Manager of a large coal mine. In 1971 he went to what was then Czechoslovakia to do his PhD, which he completed in 1975. He worked in the coal industry in India until 1980 as a senior planning engineer. In 1980 he took up an assignment to work at the University of Liberia in West Africa. He completed this assignment in 1986, following which he joined the Faculty of the Technical University of Ostrava in the Czech Republic. During his tenure at that university he became head of the Institute of Environmental Engineering and "Phare Project Management Cell" of the university. Currently he is the Director of the Centre for European Studies of that university.

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Dr. Ganguly has been responsible for organising and participating in several international postgraduate teaching and training programmes sponsored by the Commission of the European Communities, as well as a number of international conferences and seminars.

Dr. Ganguly has published widely, mainly on sustainable development, environmental protection and related issues. He is on the Editorial Board of the journal, *Environment, Development and Sustainability* published by the Kluwer Academic Publishers of Dordrecht, the Netherlands.

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