Pollution Control Mechanisms: A Socio-Legal Analysis

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Abstract

Harmful substances that pollute the environment should be controlled through legal and social interventions. While appropriate legislative regulations will compel polluters to act in line with the provisions of the laws which specifically prohibit acts of pollution, there is social responsibility on the part of the would-be polluter to know that the act of pollution would likely cause irreparable damage and could lead to permanent health problems and death. South Africa, India and the United Kingdom have put in place and are implementing numerous pollution control interventions. Pursuant to this, a modest comparative perspective was done. These efforts will only become successful if there is overall support by all, to ensure that acts of pollution is discouraged rather than encouraged.

Keywords: *Harmful substances, Pollution Control, Legal and Social Interventions, Irreparable damage, Health Problems.*

1. Introduction

Controlling and preventing human activities that are harmful to the environment is the focus of various legal interventions on pollution control (White, 2008). Emissions or dumping of any harmful substances to any part of the environment-water, air, atmosphere, ecosystems and so on are totally unacceptable in any society (Goonetilleke et al. 2014). The environment is described as everything that makes up our surroundings that affects our ability to live on the earth, that the air we breathe, the water that covers most of the earth's surface, the plants and animals around us, and much more (Gore, 2006).

Pollution is a major problem to the society (Inglehart, 1995) and the concern on how to reduce, prevent and control it is increasingly gaining momentum in all corners of the society (Milbrath, 1984). This is the reason why there is a resounding support for the environmental rights and justice.

The right to a healthy and clean environment simply means that people must live in an environment conducive to the well-being of living and non-living things (Du Plessis, 2011). Therefore, it is the responsibility of everyone to take care of the environment and prevent it from being polluted, degraded and destroyed (May, 2005). The state has constitutional role to intervene in whatever form in order to protect the environment even to the extent of implementing and enforcing policies and laws on environmental rights and laws (Cusack M E 1993). By so doing, the state can also legislate protective mechanisms that will take care of environmental rights of the present and future generations and insists that present generations should act responsibly by not depleting the natural resources or harm the environment by engaging in unsafe and destructive activities (Ringquist, 1993).

Pollution is defined as the introduction of substances or energy liable to cause hazards to human health, harm to living resources and ecological systems, damage to structures or amenity, or interference with legitimate uses of the environment by man (Holdgate, 1980). In South Africa, The National Environment Management Act 107 of 1998 (NEM) defines pollution as any change in the environment caused by substances, radioactive or other waves, or noise, odors, dust or heat emitted from any activity, including the storage or treatment of waste or substances, construction and the provision of services, whether engaged in by a person or an organ of state, where that change has an adverse effect on human health or well-being or on the composition, resilience and productivity of natural or managed ecosystems, or on materials useful to people, or will have such an effect in the future.

Undoubtedly, environmental pollutions of all types are the major causes of various diseases and health hazards (Kampa and Castanas, 2008). They could also cause permanent disability and death at times (Smith et al. 199). They affect the ecosystems and biodiversity (Yu et al. 2011). Although, outright elimination of pollution of all kinds and sorts is not feasible because it is not the best method of solving the problem otherwise the entire humanity and civilisation will be out rightly eliminated (Orr, 2004). Thus, complete prevention and elimination of pollution is unrealistic (Lis and Chilton,

1993). One of the ways of solving the problem is to intensify actions on pollution control mechanisms. This can be done by eliminating wasteful practices; this is why pollution and waste management go hand in hand (Freeman et al. 1992). For effective pollution control, there is a need to focus on the acceptable level of pollution (Corvalán, 1999). To achieve this, all responsible governments should put in place and also implement policies and laws on pollution control measures and strategies (Hills and Roberts, 2001).

Section 24 of the Constitution of South Africa Act 108 of 1996 provides that everyone has the right to an environment that is not harmful to their wellbeing, and to have the environment protected, for the benefit of present and future generations, through legislative and other measures. The right to environment is a fundamental human right in South Africa and imposes an obligation on the state to make sure that everyone has the right to a healthy environment (Scott and Macklem, 1992).

South Africa is basing its economic growth and development toward holistic sustainable development where the economy will keep growing but not at the expense of the clean environment (Rogers et al. 2008). An institution to management and control pollution and waste has been established through the White Paper on Integrated Pollution and Waste Management for South Africa (Fuggle et al. 2009). The objectives of the White Paper are: to promote cleaner production and establish mechanisms to ensure continuous improvements in best practice in all areas of environmental management; to prevent, reduce and manage pollution of any part of the environment due to all forms of human activity, and in particular form radioactive, toxic and other hazardous substances; to set targets to minimize waste generation and pollution at source and promote a hierarchy of waste management practices, namely reduction of waste at source, reuse and recycling with safe disposal as the last resort (Post and Altma, 1994).

India, like any developing country is plagued with pollution (Afsah, et al. 1996). Factors that contribute to pollution are migration from rural to urban areas, discharge of untreated sewerage and industrial waste water in rivers, unscientific disposal of solid waste by municipalities, discharge of affluent from automobiles whose number increase every year and poor governance systems on the control of water, environment and sanitary pollution. (Chaudhary, 2011). Apart from the formal regulation of pollution in India, The country has also used informal regulation through the press and studies have shown its efficacy (Kathuria, 2007). The study of Pargal et al. (1997) found that "high levels of pollution in India elicit a formal regulatory response: inspections. But inspections are ineffective in bringing about changes in behaviour, probably because of bureaucratic or other problems in following-through."

In the United Kingdom (UK) there is a "growing consensus of opinion now holds that pollution control arrangements will be successful only when they are more fully integrated. Integrated pollution control (IPC) is an attempt by administrators to develop institutional structures and operational modalities that take cognisance of the interconnected functioning of environmental systems. With the implementation of the Environmental Protection Act (1990), the UK government has started to introduce a form of IPC" (Jordan, 1993).

With regard to pollution from the industry and the role played by different determinants of emissions intensity in the UK, the study of Cole et al. (2005) found "pollution intensity to be a positive function of energy use and physical and human capital intensity."

2. Pollution Control: A Consideration of Regulatory Frameworks

Pollution adversely affects the earth's vitality, diversity and conservation (Agrawal and Agrawal, 2000). One of the priority actions aimed at conserving earth's vitality and diversity is that a highly conservative approach to pollution must be adopted by industries and the government by minimizing, and where possible preventing, the discharge of harmful substances (Ring, 1997). This basically means control of pollution should aim at the greatest possible reduction of pollution. India adopted this method of pollution control. In India, the protection of environment is a common subject to all (Chavan, 2011). Article 48-A of the Constitution of India provides that the State shall endeavor to protect and improve the environment and to safeguard the forests and wild life of the country. Article 51-A of the Constitution imposes as one of the fundamental duties of every citizen, the duty to, protect and improve the natural environment including forests, lakes, rivers and wild life and to have compassion for living creatures.

There are aspects of common law that can be used to deal with pollution problems which are the law of nuisance and aquilian action (Feris, L.A. 1999). Types of nuisance that can fall under the definition of pollution are smoke, odors, water pollution and noise. Nuisance can be defined as an unreasonable action that can interfere with the comfort of human existence (Loehr, 2012). Remedies like self-help, which is applicable only in cases of urgent necessity, can be used to abate the nuisance (Sugarman, 2009). Other means to abate nuisance are abatement notice, which applies in cases where a nuisance has been provided for in a statute (Paterson and Kotzé, 2009) an interdict that is, a court order, restricting the offender from starting or continuing with the nuisance, and an action for damages where there is

patrimonial loss involved (Paterson and Kotzé, 2009). Where an act of pollution has caused personal injury or damage to someone's property, the victim can use the delictual remedy of the aquilian action (Potgieter, 2012). There are a number of pieces of legislation in South Africa dealing with pollution either aimed directly at combating pollution or indirectly having the effect of doing so. There are principles of pollution control and numerous measures to curb pollution. For example, NEMA provides in terms of section 28 that every person who causes, has caused or may cause significant pollution to the environment must take reasonable measures to prevent such pollution form occurring, continuing or recurring or minimize and rectify such pollution. This provision imposes obligation on, and mandates any person who causes, has caused or may cause pollution to take reasonable measures to prevent such pollution from occurring, continuing or recurring.

Section 31A of Environmental Conservation Act 73 of 1989, which has similar aim as prescribed in situation of section 28 of NEMA, provides that if any person performs any activity or fails to perform any activity as a result of which the environment is, or may be seriously damaged, endangered or detrimentally affected, the relevant authority may direct such person in writing to cease such action or to take such steps as the authority may deem fit to eliminate, reduce or prevent the damage, danger or detrimental effect.

In cases of unexpected sudden occurrence that results to a serious pollution of the environment, section 30 of NEMA provides for the control of such emergency incidents by imposing duties on the responsible person to report the incident and take all reasonable measures to contain and minimize the effects of the incident (Nabileyo, 2009).

In terms of institutional oversight and enforcement compliance, part B of Schedule 4 of the Constitution listed air pollution as one of the functions of both the national and provincial legislative competence, which means that they are both competent to enact legislation on air pollution to be administered at local government level (Hamann et al. 200).

The Atmospheric Pollution Act was replaced by the National Environment Management: Air Quality Act Act 39 of 2004. Under this Act, all spheres of government must establish air quality and emission standards for all three tiers of government as articulated in Section 9 (national) section 10(provincial) and section 11(local). The standards set must not conflict with each other at any level. Apart from the management aspect of the Act, there are other related Acts that could be performed for the purpose of ensuring good air quality. Section13 of the Air quality Act Act 39 of 2004 provides for the establishment of National Air Quality Advisory Committee and other officials responsible to prepare air quality management plans which must identify declared areas where it is believed that ambient air quality standards being or may be exceeded in that areas. The plans are used to coordinate and designate areas that have been affected in order to rectify the situation.

One of the objectives of the National Water Act 36 of 1998 (NWA) is the reduction and prevention of pollution and degradation of water resources (Stein, 2004). Section 19 of the NWA provides that any person who occupies or uses the land on which activity is performed or undertaken, which causes or is likely to cause pollution of a water resource, must take all reasonable measures to prevent any such pollution from occurring, continuing or recurring. The Catchment Management Agency may direct a person who fails to take such measures to take specified measures within a specified time failure to which costs may be claimed from the affected persons.

In South Africa, NWA makes it an offence to unlawfully and intentionally or negligently commit any act or omission, which pollutes or is likely to pollute a water resource (Algotsson et al. 2009). The Services Act 108 of 1997 provides in section 7, that no person may dispose of industrial effluent in any manner other than that approved by the water services provider nominated by the water services authority, having jurisdiction in that area in question (Algotsson et al. 2009). It is the responsibility of every local authority to prevent the occurrence of any condition that could be harmful or dangerous to the health of any person within its district (Wall and Ramsden, 2010). The local authority must also prevent pollution of any water intended for the use of the inhabitants of its district (Bond, 2000). This precautionary and polluter pays principles are well recognised in India, hence section 24 of the Water (Prevention and Control of Pollution) Act of 1974 states that no person shall knowingly cause or permit any poisonous, noxious or polluting matter determined in accordance with such standards as may be laid down by the State Board to enter into any stream or well or sewer or on land; or no person shall knowingly cause or permit to enter into any stream any other matter which may tend, either directly or in combination with similar matters, to impede the proper flow of the water of the stream in a manner leading or likely to lead to a substantial aggravation of pollution due to other causes or of its consequences (Allan 2003). South African marine pollution control law is largely based on international conventions in which South Africa is a signatory (Oelofse et al. 2007). Section 2 of the Dumping at Sea Control Act 73 of 1980 provides three offences that may result from dumping substances, dumping or loading for dumping without a special permit and dumping or loading any substance without general permit. This Act has limitation because it is only applicable to territorial waters and not internal waters. Therefore enforcement could be done only on territorial waters and not internal waters.

Marine Pollution Act 2 of 1986 which is subject to the prevention of Pollution from Ship Convention applies in South

Africa and is aimed at the prevention of pollution of the marine environment by the discharge of harmful substances, however, the Act does not provide for sanctions in case of the violation of the Act. The Marine Pollution Act 64 of 1987 allows South Africa to take measures outside territorial waters to prevent or address danger from oil pollution and the Marine Pollution Act 6 of 1981 deals with pollution in the prohibited areas (Fuggle et al. 2009). The Act provides for both civil and criminal liability and places duties on owners and masters of ships.

The Environment Conservation Act 73 of 1989 provides for the prohibition of littering on any land or water surface except in a container or a place set apart for that purpose in section 9. It provides that everyone in control of, or responsible for the maintenance of any place, to which the public has access shall at all times ensure that adequate and suitable containers or places are provided for the discarding of litter by the public. An amendment to the Act has made provision for the compulsory charging on waste types. The Health Act 63 of 1977 also provides for the measures to be taken by the local authorities in order to maintain hygienic and clean condition and prevent any form of pollution in its district.

Noise is a form of pollution that has the effect of disturbing people's peace. It is the type of pollution that can be addressed by means of the law of nuisance; local authorities also have regulations controlling noise pollution (Olayinka, 2012). Legislation that deals with noise pollution is the National Road Traffic Act. Act 93 of 1996 provides that no person shall operate or permit to be operated on a public road a vehicle causing noise and motor vehicle regarded as un-roadworthy.

Pesticides, also a form of pollution are known to cause harm which can result in death to human beings (Assessment, 2005). The Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act 36 of 1947 control the use of pesticides in South Africa. While pesticides can be used to eliminate destructive insects, the report of written for Water Research Commission-South Africa by Naidoo and Buckley, (2003) revealed that "the use of pesticides can come at a cost if irresponsibly applied, or disposed. The hazards associated with pesticide use are real. With the strong lobbying power of environmental groups pesticides are now viewed as a sensitive issue."

The Occupational Health and Safety Act Act 85 of 1993 provide regulations for noise in the workplace and focuses on the health and safety issues affecting employees in the workplace.

In India, to control vehicular pollution, it was advised that the use of lead in gasoline should be banned; there should be uniform fuel quality and emission standards across India; private vehicles should be banned from using diesel manufacturing of diesel fuelled cars should be banned and a national task force should be established to develop the use of hydrogen gas as an alternative fuel for cars (Bansal and Bandivadekar, 2013).

The developed country such as the United Kingdom (UK) is also aware of the danger of pollution and is taking various measures to control and reduce pollution; Britain's filthy air kills an approximate of 50,000 people a year (Garte, 2008). The Government encouraged people to drive diesel cars which were more fuel efficient but created more particulates, while the introduction of biomass boilers in urban areas led to air pollution. Poor air quality is linked to respiratory illness, heart disease and asthma, conditions which can dramatically lower life expectancy. On average, people across the UK lose seven to eight months of their lives because of filthy air. In pollution hotspots, the timeframe lost rises to eight or nine years (Walley, 2011). Despite the devastating consequences, the Government is putting very little effort into reducing air pollution compared to its drive to cut smoking, alcohol misuse and obesity (People, 2011). Pollution from larger industrial installations is regulated under the Pollution Prevention and Control regime which aims to reduce emissions from industrial installations and contributes to meeting various environment policy targets and compliance with European Union(EU) directives (Clibbon, 2012). The United Kingdom has introduced a user friendly, updated online pollution control system which give details of everything from industrial pollution, to air, noise, waste management and water pollution for the public (Colvile et al. 2001).

In India, as part of pollution control, various controlling methods were evolved to combat pollution. One of them is the National Environment Policy. There are different Acts also passed in India for the purposes of pollution control such as; Environment Protection Act of 1986, National River Conservation Plan, Water (Prevention and Control of Pollution) Act of 1974, Central Pollution Control Board and State Pollution Control Boards. To help in pollution control, a National Air Quality Plan was recognized to help in creating early warning system and confirming air and water quality to WHO standards.

Kampa and Castanas (2008) have indicated that despite the fact that pollution are caused by all sorts of physical activities, they however singled out anthropogenic activities as the major cause of environmental air pollution and indicated that "although a number of physical activities (volcanoes, fire, etc.) may release different pollutants in the environment, anthropogenic activities are the major cause of environmental air pollution. Hazardous chemicals can escape to the environment by accident, but a number of air pollutants are released from industrial facilities and other activities and may cause adverse effects on human health and the environment. By definition, an air pollutant is any

substance which may harm humans, animals, vegetation or material. As far as humans are concerned an air pollutant may cause or contribute to an increase in mortality or serious illness or may pose a present or potential hazard to human health. The determination of whether or not a substance poses a health risk to humans is based on clinical, epidemiological, and/or animal studies which demonstrate that exposure to a substance is associated with health effects. In the context of human health, "risk" is the probability that a noxious health effects may occur." The same argument applies to other aspects of pollution. In most instances, they are caused by human activities just like air pollution. For instance, dumping of waste into a river will definitely cause pollution; (Adeyemo, 2003) this is caused by human activities so also blasting of music causing noise pollution is also as a result of human activities (Coates, 2005). Unless and until there is a collective effort to control all these activities, there is the possibility that we will continue to live in polluted earth (Dryzek, 2013).

3. Discharge of Harmful Substances and Environmental Social Concerns

Discharge of harmful substances is a serious social concern especially when it contaminates other sources of natural resources beneficial to human beings and health (O'Brien, 2000). "Hundreds of statutes, administrative regulations and court decisions have reinforced a central public policy message of societal concern for the environment." The United Kingdom, South Africa and India have created extensive legal systems to enforce environmental control and performance goals (James et al. 1994).

According to Nabileyo (2009) "environmental liability rules are crucial in a country such as South Africa. The issue of liability pertaining to pollution of or harm to the environment is a critical area in our law as environmental liability is not adequately addressed in terms of South African law. Liability law is thus directed towards the objectives of damage prevention and the distribution of loss in accordance with considerations of social justice. Liability law is necessary in order to prevent environmental pollution or degradation. An example of pollution to the environment is when goods are transported and a traffic accident occurs, which results in the spillage of harmful substances. Harmful substances may for instance be easily transmitted to surface water or underground water. These substances may have adverse effects on human health and the environment."

The consequences of what is portrayed above may be dire and have devastating lingering health problems. The ripple effect may make the whole economic activities in the affected area redundant and cause massive unemployment. It is in the light of this, that it becomes imperative to prevent discharge of harmful substances. However, if it occurs, appropriate intervention should be used to reverse the damage done and hold perpetrators accountable.

But more importantly, there should be a general consensus on the need to regulate and monitor waste production, enforce waste control measures, and co-ordinate administration of integrated pollution and waste management through a single government department, (Naidoo and Buckley, 2003) to set up information systems on chemical hazards and toxic releases and ensure the introduction of a system to track the transport of hazardous materials (Shen, 1995) and to ensure the protection and proactive management of human health problems related to the environment in all forms of economic activity (Shen, 1999).

4. Conclusion

In South Africa, there is huge pollution and environmental enforcement problems due to fragmented pieces of legislation on pollution control. An integrated pollution control approach is needed to solve the problems and each legislation should be explicit and state categorically what it seeks to do. This will make implementation and enforcement very effective and efficient. Lessons should be learnt from India and the UK where they have put in place effective and efficient mechanisms to hold perpetrators responsible and accountable.

5. Recommendations

Obstacles in whatever forms or ways that are making implementation and enforcement of pollution control impossible should be tackled and removed. One of the best methods to control pollution is to insist on restitution. Perpetrators must be compelled to right the wrong done. . This is a very effective and important remedy because it strives to restore the polluted area to its original unpolluted state. Punitive action in addition to the restitution in order to serve as a deterrent should also be explored if need be as a means of pollution control. One of the routes that polluters use to escape liability in South Africa is the exploration of the gaps in the law knowing very well that there is no integrated environmental protective mechanism in South Africa. Therefore, it is of utmost imperative to put in place the integration of South Africa's

fragmented environmental governance regime based on the various strategies that have been proposed by Kotze (2007) to achieve integration, including, amongst others, Kotze proposed that "cooperative environmental governance, integrated environmental management/governance; operational integration of authorisation procedures; an integrated environmental framework act; a collaborative strategy for holistic environmental governance; and a one-stop environmental governance shop. The sheer scope of publications dealing with this issue is testimony to the fact that fragmentation has always been, and remains, one of the more notorious challenges to bedevil current endeavours to achieve sustainable EG in South Africa" (LJ Kotze).

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