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TITLE

ANALYSIS OF WATER POLLUTION CONTROL LAWS IN SOUTH AFRICA:
A COMPARATIVE ANALYSIS OF SOUTH AFRICA, INDIA AND THE UNITED KINGDOM

QUALIFICATIONS

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ANALYSIS OF WATER POLLUTION CONTROL LAWS IN SOUTH AFRICA:
A COMPARATIVE ANALYSIS OF SOUTH AFRICA, INDIA AND THE UNITED
KINGDOM

BY

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MINI DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE
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ABSTRACT

Water is the source of life for human beings, animals and plants also need water for them to grow. The scourge of water pollution in our country due to various reasons is of great concerns and if left unattended will have dire consequences. Uncontrolled water pollution results in health hazards to human beings, animals and other living things. In terms of our Constitution the state as a custodian of all natural resources has a duty to ensure that water as a scarce resource is preserved for the present and future generations. Legislative measures are needed in order to ensure that same prevails. Legislation imposes measure such as a permit and its condition that must be respected by the holder of such permit. Failure to observe the condition of the permit is punishable by law for both corporates and human beings.

Most environmental crimes are caused not by a deliberate intention or negligence but by poor or ineffective management systems. Public education is important in ensuring that water pollution does not take place. Authorities must also be strict in ensuring compliance with permits and prevention of water pollution as prevention is better than cure. This dissertation examines water pollution legislation in South Africa, India and the United Kingdom and offers a comparative analysis and recommendations to South Africa. The three countries are developed and also allocated in three different continents. The examination and analysis of how they fight water pollution gives a chance to South Africa on how it may improve its legislation and maintain its water quality.

DECLARATION BY STUDENT

I declare that the mini dissertation hereby submitted to the University of Limpopo, for the degree of Master of Laws in Development & Management Law has not previously been submitted by me for a degree at this or any other university, that it is my work in design and in execution, and that all material contained herein has been duly acknowledged

NKOSI B. R. Ms

DATE

DECLARATION BY SUPERVISOR

I as the supervisor I agree to the submission of this thesis.

PROF. K.O. ODEKU

DATE

DEDICATION

To the Almighty God who makes things possible in my life and finishing what he has started in me. I am forever grateful to him for giving me the strength to carry on, protecting and keeping me safe from harm.

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**ANALYSIS OF WATER POLLUTION CONTROL LAWS IN SOUTH AFRICA:
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CHAPTER ONE

1.1. BACKGROUND TO THE STUDY

South Africa is a predominantly semi-arid country; it has an average rainfall of 450mm per annum compared to the world average of 860mm per annum¹. As a result South Africa's water resources are scarce and limited. Water is an important resource as it is fundamental to all forms of life; human beings, animals and plants need water regularly for their growth and well-being². Without water on earth life will be non-existent as it is essential for everything on our planet to grow and prosper.

There are different categories of water resources; these include surface water, ground water, water impoundments and precipitation. Surface water includes all water that is stored on the ground such as lakes, dams, wetlands, rivers etc. whilst groundwater refers to water that is contained by the sub-surface³. Water pollution occurs when water is contaminated; pollutants are discharged directly or indirectly into those water reservoirs without adequate treatment to remove the pollutants⁴.

Consequently, the polluted water then becomes unsuitable for any human consumption as it can be lethal; it is also a threat to the flora and fauna⁵. Most diseases in the world are related to water and sanitation and to break the cycle of

¹ South African government online, 2014. About South Africa –geography and climate. Available at www.gov.za/about S.A./geography.htm. Accessed on 20/05/14

² University of California Santa Barbara (UCSB) Science Line, 2014. Why do plants need water? Available: www.scienceline.ucsb.edu/getkey.php?key=3551. Accessed 20/05/14

³ 1 ibid

⁴ M.C. Hogan, 2013 Water pollution. The Encyclopaedia of Earth. Available at www.Eoearth.org/view/article/156920 accessed:21/05/14

⁵ Leaner Annenberg, 2010. The habitable planet, unit 8: water resources available: www.leaner.org/courses/envsci/unit/pdfs/unit 8. Pdf. Accessed 20/05/14

diseases there must be improvements in the quality of water that people use⁶. This was evident in a recent case in Carolina, Mpumalanga, where the water was found to be contaminated by acid mine seepage and many people were reported to be suffering from stomach ailments⁷.

In an unreported matter between *Federation for Sustainable Environment and Others versus Minister of Water Affairs and Others*⁸ the North Gauteng High Court made an order compelling the Gert Sibande Municipality to provide temporary potable water to the residents of Silobela, Caro Park and Carolina within 72 hours. The order also directed the municipality to engage actively and meaningfully with the residents regarding the steps that are being taken to ensure that potable water can once again be supplied through the water supply services. It is once again evident that the courts are not afraid to hold structures of government that are responsible for ensuring the fulfilments of people's human rights accountable to their obligation.⁹ Water pollution has ghastly consequences on human health as well as the environment, a polluted river can negatively affect the flora and fauna and the recovery could take years. Most often than not the polluter cannot fully remedy the situation to its previous state thus prevention of pollution becomes a better policy than restoration.

Glazewski states that "between 12 and 14 million South Africans do not have access to safe water and over 20 million are without sanitation"¹⁰. Legislation is required to regulate the conduct of people to ensure that they maintain and conserve clean water.

⁶ 4 ibid

⁷ S. Blaine 2012. Carolina's polluted water highlights growing problem in S.A. (Business Day). Lawyers for human rights. available www.lhr.org.za/news/2012 Carolina's- polluted water-highlights-growing- problem- in sa/ accessed on 22/05/14

⁸ Case no:(35672/12) (2012)ZAGPPHC 140

⁹Federation for Sustainable Environment and Others v Minister of Water Affairs and others case no: (35672/12) (2012) ZAGPPHC 140

¹⁰J Glazewski. Environmental Law in South Africa 2ed 2005 (427)

1.2. PROBLEM STATEMENT

As a rule, one would look towards the polluter and “the user pays principle” which holds that polluters and users of natural resources bear the full responsibility of their impact on any resource¹¹. According to J.J.Warford the principle is an economic instrument that is aimed at affecting the behaviour that is by encouraging and inducing behaviour that puts less strain on the environment, examples of an attempt to apply this principle include financial charges for industrial waste discharges and special taxes on pesticides¹². This is not always possible because at times as the polluters are unknown and thus no one can be held responsible¹³.

The aim of this dissertation is to investigate whether the South African legislations dealing with water pollution are able to hold the culprits liable and if not how to remedy the situation. As the state is the custodian of water resources, they are responsible for the sustainable management of water and thus are also liable for any pollution.

The problem in South Africa is that the people or agency that have the authority to do so has no will to ensure that polluters are held accountable for their deeds. The mines play an integral part in the economy of South Africa¹⁴ and on the other side they are the main source of water pollution in the country, the question is how to

¹¹ M. R. Grossman, 2006. Agriculture and the polluter pay principle. Electronic journal of comparative law; 11:3. Available : www.ejcl.org/113/article113-15.pdf

¹² 1994 Environment, Health and Sustainable development: The Role of Economic Instruments and Policies. Discussion paper for the Director- General’s Council on the Earth Summit Action Programme for Health and Environment

¹³ *ibid*

¹⁴ C. Smith, 2013. The role of mining in the South African economy. KPMG. Available : www.sablog.kpmg.co.za/2013/12/role-mining-south-african-economy/ accessed 22/05/2013

maintain the balance between economic objectives and still preserve our waters, is the legislative framework of our country doing enough to curb water pollution.

1.3. LITERATURE REVIEW

Pollution has been defined as “something in the wrong place” by Jeffries & Mills¹⁵. This definition conveys the important fact that any substance can be considered a pollutant, if it is present in concentrations exceeding those normally found in the system. A formal definition of pollution is given by Mason¹⁶ as “the introduction, by humans, into the environment of substances or energy liable to cause hazard to human health, harm to living resources and ecological systems, damage to structure or amenity or interference with legitimate use of the environment”. The definitions of pollution by the two writers gives a clear indication that pollution only happens when foreign objects are present in water reservoirs, be it in ground water or surface water.

According to Moyo and Mtetwa and other experts on water resource development, the quality of water supplies in the SADC region once taken for granted is becoming the focus of increasing concern¹⁷. They contend the solid, liquid and particulate waste that result from urbanisation and economic activities are contaminating air, soil and water. The report suggests that the main sources of water pollution are untreated or partially treated effluents from municipal, industrial and mining waste water discharges. Professor Moyo in his discussions went further to say that degradation of river water quality has increased the health risks of those who consume the water from the region’s water resources.

¹⁵Jeffries & Mills D 1990 Fresh water ecology: principles and applications. Belhaven Press , London

¹⁶Mason CF 1990 Biological aspects of freshwater pollution: In green pollution book

¹⁷ The 1990 report on “Water Quality Management and Pollution Control in South Africa.”

The problem of water pollution is not only prevalent in South Africa but in many parts of the world also. This was evident from the study that was done on the Ganga River in India; according to the case study that was prepared by Sharma in 1997¹⁸ the people of India believe that the river is “Holly”. However this has not prevented the over use, abuse and pollution of the river; the towns along its banks are said to be contributing to the pollution of the river. Sharma characterises the sources of the pollution of the river to be domestic and industrial waste: solid garbage thrown directly into the river, non-point sources of pollution such as agricultural run-off containing residues of pesticides and fertilisers, animal carcasses and half burned and unburned human corpses thrown into the river, defecation on the banks by the low income people, mass bathing and ritualistic practices¹⁹.

In terms of the Noumea convention,²⁰ states are obliged to take all the appropriate measures to prevent, reduce and control pollution from any source and to ensure sound environmental management and the development of natural resources using the best practical measures.

The use of economic instruments is considered a useful strategy for regulation by government, in those instances where regulation pertains to the protection of public goods, such as water resources. The polluter pays principle plays a central role in economic instruments. De Sadeleer²¹ observes in this regard that: “The polluter pays principle has successfully been invoked to address distortion or competition (objective of economic integration) as a preventive instrument to establish the internalisation of chronic pollution (instrument of prevention ex ante), and finally to

¹⁸ The Water Supply & Sanitation Collaborative Council and the World Health Organisation by E. and F. Spon, Published on behalf of the United Nations Environment Programmes

¹⁹ The case study on the Ganga, India was prepared from publicity material issued by the Ganga Project Directorate, New Delhi : prepared by Y. Sharma

²⁰ The Noumea convention for the protection of natural resources and environment of the South Pacific Region 1986

²¹ Environment Principles: from Political Slogans to Legal Rules (2002) 44.

justify the adoption of fiscal measures..... It is generally accepted that the polluter pays principle implies setting up a system of charges by which polluters help finance public policy to protect the environment"²² entails setting up a system of charges by which polluters help finance public policy to protect the environment"²³.

It must be noted that not all users of resources are polluters; only those users who discharge substances to an unacceptable level are liable to carry the cost to prevent harm and are liable to carry the cost of remedying the effects of pollution by amongst others rehabilitating the damage caused. The user pay principle means that a payment for discharge of pollutant into environmental media based upon approximate pollutant loading, this means that money will be paid to the government for the provision of environmental public goods or services, in this instance services and goods relating to use of water resources will be done within their carrying capacity.

1.4. AIMS AND OBJECTIVES OF THE STUDY.

In general South Africa has a limited supply of water and the quality of this water is being threatened by pollution and the destruction of river catchments²⁴. As the population grows so does the increase in water consumption; such an increase in usage brings about an escalation in pollution, catchment destruction and a decrease in the quality of water reservoirs and the natural environment. If we are experiencing this water situation now, what will happen in the future?

Access to clean water is a right of every person but the growth in industrialisation has increased the amount of waste pollution especially water pollution, which will

²² See also Springer : the International Law Pollution : Protecting the global Environment in a World of Sovereign States(1983)19

²³The International Law of Pollution: Protecting the Global Environment in a World of Sovereign States (1993) 19.

²⁴ 1 *ibid*

ultimately make it difficult for people affected by water pollution to enjoy this right. The health hazard to human beings, animals and other living things that polluted water poses warrants the need to impose water control measures which can reduce pollution to such an extent where very little pollutants are discharged into water.

It is said that prevention is better than restoration, so the question is why wait for the water to be polluted first then embark on cleaning up measures? It is difficult and costly to clean polluted water so it is better to prevent water pollution before it happen rather than wanting to solve the problem after it had occurred²⁵.

The aim of this paper is to analyse whether the legislative framework of South Africa is in a position to achieve access to clean water to everyone and to subsequently compare them with legislation of India and the United Kingdom. If the legislative framework is found not to be in such a position then what measures can be employed to curb such issues and whether South Africa can learn anything from these countries. The rationale for selecting these particular countries is that they are all from different continents, the United Kingdom is from Europe a developed country and such countries tend to have the best laws. India is from Asia, has a high population and is on the verge of transitioning to a developed country. South Africa is one of the leading countries in Africa.

1.5. SIGNIFICANCE OF THE STUDY

The study seeks to make a contribution to the on-going debate about the profound issues and challenges facing the environmental sector in South Africa, and the need to expand the law on water strengthening implementation and compliance of enforcement of water pollution legislation strategy by making suggestions and recommendations.

²⁵ SDWF (safe drinking water foundation), 2014. Cleaning up after pollution. Available: www.safewater.org/PDFS/resourcesknowthefacts/cleaningupafterpollution. Accessed 22/05/14

The study will benefit law and non-law students who are currently studying constitutional law, environmental law and human Rights law by bringing new insights in their studies. It will also benefit non-governmental organisations, policy makers, legislators and any persons who have an interest in environmental issues in expanding their progressive thinking and realisation of the right to clean and healthy environment as envisaged in section 24 of the constitution.

1.6. RESEARCH METHODOLOGY

The research methodology to be followed in this study is qualitative, a combination of legal comparatives, literature and jurisprudence. Legislative comparatives will be used to try and find solutions on how to prevent water pollution. The research is based on various materials, such as reports, legislation, regulations, case law, articles and papers presented in seminars and conferences.

1.7. SCOPE AND LIMITATIONS.

This dissertation consists of seven interrelated chapters. Chapter one is the background and significance of the study. Chapter two is the introductory chapter laying down the foundations. Chapter three deals with the water legislation frame work in South Africa, chapter four deals with water legislation in the United Kingdom, chapter five deals with water legislation in India, chapter six deals with the comparative study on the three countries and chapter seven deals with the recommendations and conclusions.

CHAPTER TWO

INTRODUCTION

2.1 WHAT IS WATER POLLUTION?

Water pollution is defined in the National Water Act²⁶ as “the direct or indirect alteration of the physical, chemical or biological properties of a water resource so as to make it less fit for any beneficial purpose of which it may reasonably be expected to be used, or harmful or potentially harmful to the welfare, health or safety of human beings, to any aquatic or non- aquatic organisms to the resource quality or to the property”. The Act stipulates that watercourse means a river or spring, a natural channel in which water flows regularly or intermittently; a wetland, lake or dam into which water flows and any collection of water which the Minister may by notice in the Gazette declare to be a watercourse, and a reference to a watercourse includes where relevant its bed and banks²⁷. Water resource includes a watercourse, surface water, estuary or aquifer²⁸

Water is an important resource, it is fundamental to any form of life as human beings; animals as well as plants need water regularly for their growth and well- being²⁹. There are different categories of water resources including surface water, ground water, water impoundments and precipitation.

Water pollution happens when this water is contaminated and pollutants are discharged directly or indirectly into those water bodies without adequate treatment to remove harmful compounds. This affects plants and organisms living in this water and public health either directly or indirectly. There is a need to impose water pollution control measures which can reduce pollution to an extent where very little pollutants are discharged into water in order to achieve the safety of water.

²⁶National Water Act 36 of 1998

²⁷Ibid section 1 (definition)

²⁸Ibid section 1 (definition)

²⁹ Water Wise, 2014. Water-borne diseases fact –sheet. Rand water. Available: www.waterwise.co.za/aite/water/diseases/accessed 01/06/2014

2.2 WHAT CAUSES WATER POLLUTION

In South Africa and the rest of the world water pollution is caused by a number of factors, mostly:

A. Industries, Mines and Urbanisation

- Industrial waste is one of the most pervasive and often extensive forms of pollution. These are caused mainly by sulphur, mercury and lead as well as phosphates and nitrates³⁰. The major classes of pollutants by industry are highlighted in table 1. In general industrial waste-water can be divided into two, namely organic and inorganic waste-water. The latter comprises large amounts of suspended matter which can be eliminated by sedimentation. The sedimentation is usually done in conjunction with chemical flocculation via the addition of iron, aluminium salts, flocculation agents and some kinds of organic polymers³¹.
- Waste-water however is produced in addition to the solids which contain oils and harmful solutes³². Organic industrial waste-water contains organic substances with various origins and properties. These can only be removed by special pre-treatment of the waste-water followed by biological treatment³³. Acid mine drainage and seepage are the major causes of water pollution in the country.

Industry	Pollutants
Iron and steel	BOD, COD, oil, metals, acids, phenols and cyanide
Textiles and Leather	BOD, solids, sulphates and chromium
Pulp and paper	BOD, COD, solids, chlorinated organic compounds
Petrochemicals and refineries	BOD, COD, mineral oils, phenols and chromium

³⁰ S. Hangchang, 2011. Industrial waste-water types, amounts and effects. Encyclopaedia of life support systems(EOLSS), available: www.eolss.net/sample-chapters/c09/e4-11-02-02.pdf accessed 20/05/2014

³¹ 29*ibid*

³² 29*ibid*

³³ 29 *ibid*

Industry	Pollutants
Chemicals	COD, organic chemicals, heavy metals, SS, and Cyanide
Non-ferrous metals	Fluorine and SS
Microelectronics	COD, and organic chemicals
Mining	SS, metals, acids and salts

Table 1: Water pollutants by industrial sector; **BOD**= biological oxygen demand, **COD**= chloride, organics and dioxins, **SS**=suspended solids.³⁴

B. Sewage and waste-water

- Sewage and waste-water needs to be treated before it is released into the natural environment as it contains an array of chemicals, pathogens and nutrients, many of which pose a serious threat to human health³⁵. Pathogens are biological agents which causes diseases or illness in the host, although their effects usually wear off in a couple of weeks they can be life threatening to certain population groups such as infants and the elderly. With increasing urbanisation maintenance and expansion of infrastructure should be a priority in order to prevent water pollution due to burst or leaking pipes etc.

C. Radioactive waste and underground storage leakages

- Radioactive waste is a by-product of some industrial processes, particularly electricity generation via nuclear processes³⁶. Gas stations and industries use underground storage tanks to store toxic substances such as radioactive waste, gasoline and oil containing substances such as benzene, toluene and heavy metals which can cause cancer and harm developing children³⁷. Underground storage tanks that are leaking are a great threat to groundwater;

³⁴ 29 *ibid*

³⁵ 29 *ibid*

³⁶ Greenpeace, 2012. Radioactive waste. Available : www.greenpeace.org/usa/encampaigns/nuclear/safety-and-security/radioactive-waste/ accessed:

³⁷ 29 *ibid*

the toxic materials within the underground storage tanks can travel rapidly through soil and pollute groundwater³⁸. A gallon (~3.8 L) of toxic waste can contaminate a million gallons (~ 3 800 000 L) of water³⁹.

D. Deforestation, urbanisation and agriculture

- Deforestation leads to soil erosion when the land is cleared to conduct agricultural activities, the soil is thus stripped of its protective vegetation and therefore it becomes prone to soil erosion and consequently an increase in sediment runoff⁴⁰. The high levels of sediments in lakes and/or other water reservoirs prevent sunlight penetration thus photosynthetic organisms cannot survive⁴¹. The increasing number of people moving into cities and towns (urbanising) also adds to pollution, that includes the physical disturbance of land due to the construction of houses, industries and roads⁴². There is also an increase in the discharge of effluents such as sewage.
- As the population grows more food is needed by the people that lead to an upsurge in the usage of fertilisers to boost agricultural output⁴³. This increase in fertiliser usage can result in eutrophication due to a proliferation in nitrates and phosphates in the aquatic system. Eutrophication leads to oxygen depletion (hypoxia) which adversely affects the aquatic ecosystem⁴⁴. Runoff from agriculture and other human-related activities causes an influx of both organic substances and inorganic nutrients into water reservoirs⁴⁵.

³⁸ G. Cope, 2005. Leaking underground storage tanks: a threat to public health and environment. Sierra Club. Available : www.sierraclub.org/toxics/leaking-USTS /accessed on 25/05/14

³⁹ *37ibid*

⁴⁰ Coral digest, 2014. Sediment overload. Available www.coraldigest.org/index.php?sediment. accessed on 30/05/14

⁴¹ *38ibid*

⁴² Water wise, 2014. Causes of water pollution. Rand Water. Available: www.waterwise.co.za/site/water/environment/causes-of-water-pollution.html accessed on 20/05/14

⁴³ *40ibid*

⁴⁴ *38 ibid*

⁴⁵ *38ibid*

E. Damming of rivers and destruction of wetlands

- Water flowing out of dams has reduced suspended material as a large amount of suspended material has settled at the bottom of dams; it is depleted of nutrients and is often more saline which has detrimental effects on downstream agriculture and fisheries⁴⁶. Wetlands are nature's way of damming and cleaning water as they hold back water in summer and release it in winter. Destruction of these wetlands destroys the habitat of many birds and fish, removes the natural fillers capable of storing and extenuating many pollutants such as phosphorus and heavy metals and destroys natural dams which may lead to flooding further downstream⁴⁷.

F. Energy use

- With the increase in the human population more energy is required for human activities such as cooking, lighting and other things. The bulk of energy in South Africa comes from fossil fuels (coal) and this result in increased emission of sulphur and nitrogen oxides into the atmosphere⁴⁸. These gases are the main cause of acid rain and also the release of carbon dioxide from the burning coal increases global warming⁴⁹.

G. Accidental water pollution.

- This can be of varying origin such as burst pipes and tanks, major leaks, fire and oil spills, resulting in varying degrees of damage; this damage is contingent on the toxicity, prevalence and extent of the pollutant as well as the resilience and/or adaptability of the water body⁵⁰. The substances that causes water pollution can be divided into two main groups namely germs and chemicals. Germs are small organism that causes diseases such as cholera and bilharzia and chemicals are compounds such sulphates and nitrites, which are mainly produced by industries⁵¹.

⁴⁶ 40 *ibid*

⁴⁷ 40 *ibid*

⁴⁸ 40 *ibid*

⁴⁹ 40 *ibid*

⁵⁰ 40 *ibid*

⁵¹ 40 *ibid*

2.3. CONSEQUENCES OF WATER POLLUTION

Polluted water is unsuitable for any human needs and is a threat to flora and fauna. The consumption of polluted water can result in ill health and may even be lethal, this may materialise when water-borne diseases such as cholera, caused by polluted or contaminated water, affects people. This was evident when the applicants approached the court by way of urgency seeking an order declaring that the failure of the respondents to provide access to effective/reliable potable water for more than seven full days, as prescribed by regulations 3(b) of the regulations relating to compulsory national standards and measures to conserve water to the residents of Silobela Caro park and Carolina Town in Carolina Mpumalanga is unlawful⁵². This situation emanated from the fact that the water supply in Silobela Carolina was contaminated by “acid mine water” to an extent that it was not healthy for both human and animal consumption. In an attempt to alleviate the plight of the community water tanks were brought to supply water to the community. However, due to the poor management of the water tanks the water supply in general was inadequate. Some of the residents have to walk long distances to access the potable water from the tanks.

The court issued a number of orders, one was directing the municipality to engage actively and meaningfully with the residents regarding the steps that are being taken to ensure that potable water is supplied through the water services in Silobela, Caro park and Carolina Town in Mpumalanga and where, when, what volume and how regularly temporary water will be made available in the interim. It is once again evident that the courts are not afraid to hold structures of government responsible for ensuring the fulfilments of people’s human rights as stipulated in the Constitution, it also shows the scourge of water pollution in the country and its dangers to human beings.

Since May 2014 Bloemhof in the North West province reported over 500 cases of people suffering from diarrhoea at health care facilities. Three babies died as the result of the diarrhoea outbreak. The National Institute for Communicable Diseases released a statement saying that “contaminated water was the probable cause of the diarrhoea considering the nature of the diarrhoea disease, the specific types of E. coli and viruses detected in ill persons and the extent of the outbreak in the affected

⁵² Federation for Sustainable Environment and Others v Minister of Water Affairs and Others (35672/12) [2012] ZAGPPHC 128(10 JULY2012)

community”. The water contamination crisis led to the resignation of the municipal manager of Lekwa- Teemane municipality.⁵³ The contamination was reportedly caused when sewerage spilled into the Vaal River which supplies water to the region. North West has set aside R20 million to deal with the water crisis in Bloemhof.

Water pollution causes enormous consequences to human health as well as to the environment and the polluter cannot fully remedy the situation to its previous position. Glazewski (2005) states that “ between 12 and 14 million South Africans do not have access to safe water and over 20 million are without sanitation”⁵⁴.

A polluted river may fatally affect flora and fauna and they may take years to recover. People need to maintain and conserve clean water; to achieve this legislation is required to regulate the conduct of people. Pollution of the environment by mines which dump waste in water reservoirs has a dire effect on human beings, such as birth defects, contamination of land so that crops do not grow. The Cuyahoga River in Cleveland, Ohio which served as a dump site for industries was so contaminated by chemicals that it caught fire⁵⁵ in 1969. This demonstrated the dangers of uncontrolled pollution of water.

⁵³ <http://www.news24.com/Green/News/HRC-probes-Bloemhof-water-crisis-20140607> accessed on the 09/03/2015

⁵⁴ J Glazewski. Environmental Law in South Africa 2ed 2005 (427)

⁵⁵ V Shiva. Water Wars. Privatization, Pollution and Profit(2002)32

CHAPTER THREE

LEGISLATION GOVERNING WATER POLLUTION IN SOUTH AFRICA

3.1 INTRODUCTION

Although provisions controlling water pollution appear in statutory law, these must be seen in the context of common law, particularly nuisance and neighbour law⁵⁶. In the case of *Rainbow Chicken Farm (Pty) Ltd v Mediterranean Woollen Mills (Pty) Ltd*⁵⁷, the court held that the producer of the effluent, quiet apart from the statutory duties imposed upon him by section 21(1) and (2) of the water Act of 1956, owes a common law duty of care towards others. Where the producer of effluent discharges it from his factory into a public stream and such effluent pollutes it, both in the sense that it does not conform to the standards laid down in terms of the statute and that it amount to pollution at common law an injured third party may elect whether to proceed against the producer for breach of the statutory duties or under the common law. The applicant obtained an interdict to stop the respondent from discharging effluent from its factory into the river. The significance of this case is that it creates a duty of care for the producer of the effluent to prevent it from causing harm to others. This is crucial as everyone is expected to control his or her behaviour and refrain him or herself from harming others.

Until recently in South Africa water law was developed inappropriately as access to water was to the detriment of the majority of the population. The state had the right to allocate water. The Water Act⁵⁸ which was passed in 1956 was enacted during the apartheid era and did not replace the riparian right system a doctrine developed in South African common law largely as a result of the influence of the English Law. The system gave the riparian owner the right to use the water resource and all surplus water with respect to agricultural and industrial purposes. A landowner who owns land that

⁵⁶ J Glazewski at 618

⁵⁷ 1963(1)SA 201 N

⁵⁸ Act 54 of 1956

physically touches a river, stream, pond or lake had an equal right to the use of water from that source. This was evident in the case of *Retief versus Louw*, the Supreme Court of the Cape of Good Hope, Judgement of 12 January 1856 (1874) 4 Buch 165, the upstream owner diverted the whole of the stream's summer flow and thus deprived the downstream owner of water for drinking purposes and irrigation. The court held that for perennial streams running over several adjoining land parcels, landowners have each a common right in the use of water which use at every stage of its exercise by any one of the proprietors is limited by a consideration of rights of other proprietors. This led to the majority of Black South Africans being restricted in their access to water because most were not land owners.

The Act made a distinction between private and public water. Private water is defined as "all water which rises and or falls naturally on any land or naturally drains or is led onto one or more pieces of land which are the subjects of separate original grants but is not capable of common use for irrigation purposes". This gave the owner in whose land private water was found exclusive use and enjoyment of such water provided he does not pollute it.

The Water Act 54 of 1956 made a distinction between private and public water. Public water is defined in the act as "any water flowing or found in or derived from the bed of a public stream whether visible or not". Public water is defined in the Act as "any water flowing or found in or derived from the bed of a public stream whether visible or not". The right to use public water was divided into three categories namely: agricultural purposes, urban purposes and industrial purposes provided that such usage was beneficial and did not amount to wastage.⁵⁹

After 1994 when the new dispensation came into effect an obligation was placed on the state by the Constitution⁶⁰ to ensure that water as a scarce resource is preserved for the present and future generations therefore the state has a duty to take legislative and other measures to protect the environment. Clean and clear water links closely with an environment that is not harmful and the need to prevent pollution. Water falls within the exclusive

⁵⁹ South Africa Act 54 of 56

⁶⁰ Act 108 of 96

national competence and the state is the custodian of the nation's water. The Department of Water Affairs is the control body of water.

Section 24 of the constitution states the following:

“Everyone has the right to -

- a). an environment that is not harmful to their health or well – being and
- b). to have the environment protected for the benefit of present and future generations through reasonable legislative and other measures that
 - i. prevents pollution and ecological degradation;
 - ii. Promote conservation; and
 - iii. Secure ecological sustainable development and use of natural resources while promoting justifiable economic and social development.”

The right to water is provided for in section 27 of the constitution as follows

“1. Everyone has the right to have access to

- a.
- b. Sufficient food and water.....

2. The state must take reasonable legislative and other measures within its available resources to achieve the progressive realisation of each of these rights”.

The new water legislation centres around these two rights mentioned above although they are not the only relevant fundamental rights with regard to access to water, others include section 9⁶¹, 10⁶² and 11⁶³ of the constitution

3.2 WATER LEGISLATION

The National Water Act 36 of 1998 was signed to law by the president of the Republic on the 20 August 1998 with the view to regulate the manner in which individuals obtain clean water and provides for just and equitable utilization of water

⁶¹ Right to equality

⁶² Right to human dignity

⁶³ Right to life

resources. The Act is based on the constitutional right of access to water⁶⁴, it recognises that water is a natural resource and belongs to all people. Sustainability and equity are identified as central guiding principles in the protection, use and management of water resources.

This guiding principle recognizes:

- The basic human needs of present and future generations
- The need to protect water resources
- The need to share some water resources with other countries and
- The need to promote social and economic development through the use of water.

One of the objectives of the National Water Act is to reduce and prevent pollution and degradation of water resources⁶⁵. Section 19 deals with prevention and remedying effects of pollution. It provides that an owner of land, a person in control of land or a person who occupies or use the land on which an activity or process is or was performed or undertaken as any other situation exists, which caused or is likely to cause pollution of a water resource must take all reasonable measures to prevent any such pollution from occurring, continuing or recurring⁶⁶.

The question of whether water flowing in a stream or river can be stolen was answered in the case of *Mostert v The State*⁶⁷, the Honourable Judges in this matter argued that in terms of the South African Law water in a public river is *res communes* and as such it was not capable of being owned or stolen. Section 4 of the National Water Act provides that:

4. (1). A person may use water in or from a water resource for purposes such as reasonable domestic use, domestic gardening, animal watering, fire fighting and recreational use, as set out in schedule 1.⁶⁸

⁶⁴Section 27.(1)(a) and (2)

⁶⁵Section 2(h) of the Act

⁶⁶Section 19(1)

⁶⁷ 2010 (2)SA 586(SCA)

⁶⁸ Schedule 1, (1). States that 'A person may subject to this act

(a)take water for reasonable domestic use in that person's household, directly from any water resource to which that person has lawful access

My view is that the court erred in saying that because in terms of the National Water Act a person cannot take water for commercial use without the necessary authorisation and in this instance Mr Mostart was using the water for irrigation purposes in his farm which is contrary to schedule one of the National water Act.

The reasonable measures that may be taken include measures to cease, modify or control any act or process causing the pollution, to comply with any prescribed waste standard or management practice, to contain or prevent the movement of pollutants, to eliminate any source of pollution, to remedy the effect of the pollution and of any disturbance to the bed or banks of a water course⁶⁹.

Any person who fails to take reasonable measures required may be directed by a catchment management agency to commence taking specific measures before a given date⁷⁰. If a person fails to comply, or complies inadequately with any given directive, the catchment management agency may take the measures it considers necessary to remedy the situation⁷¹.

In terms of section 19 (4) and (5) of the National Water Act 36 of 1998 the catchment management agency has a duty to recover all costs incurred if a person has failed to comply or complied inadequately with the directive given in terms of sub section (3) as a result of taking the necessary and/or reasonable measures to remedy the situation individually and/or jointly, these include any person who is or was responsible for or who directly or indirectly contributed to the pollution or potential pollution this will include the owner of the land at the time when the pollution or potential for pollution occurred or the owner's successor in title. They also include the person in control of the land or any person who has a right to use the land at the time when the activity or the process is or was performed or undertaken or the situation came about also people who negligently failed to prevent the activity or the process being performed or undertaken or the situation from

-
- (b) take water for use on land owned or occupied by that person for—
(i). reasonable domestic use
(ii). Small gardening not for commercial purposes and
(iii).

⁶⁹Section 19 (2) (a-f)

⁷⁰Section 19(3) (a-c)

⁷¹Section 19(4)

coming about⁷².

In practice environmental officers mostly perform necessary activities and claim from the responsible person later. It makes sense to prevent further pollution of the water than having to pursue the perpetrators at that point in time as the state has a duty to protect the water for the present and future generations in terms of the Constitution.

The interpretation of section 19 of the National Water Act was the issue in the *Minister of Water Affairs and Forestry versus Stilfontein Gold Mining Company and Others*⁷³. The applicant issued directives in terms of section 19(3). The applicant was concerned that mining activities in the KOSH area may cause pollution to valuable water resources. The directives were aimed at ensuring that the risk of water pollution as a result of mining activities did not materialise. The mines were not disputing that their activities could potentially cause pollution to water resources and that management of underground water was essential to continued safe mining operations. The mines are Stilfontein, Buffelsfontein, Hartebeesfontein, Harmony and AngloGold. The first three are the northern most shallowest and defunct. They closed their mining operations years ago, but they continued dewatering ground-water from their shafts. The ultimate dispute followed the liquidation of one of the companies Buffelsfontein and the consequent threat of dewatering of that mine. The purpose of dewatering was to extract water at the highest possible level before it becomes polluted and to prevent the deeper mines becoming flooded.

As a result the Regional Director issued two directives in terms of section 19(3) of the National Water Act. The directives required Harmony to pump water from its shafts and in addition to share in the cost of pumping water from disused shafts. Harmony was aggrieved by the latter aspect of the directive and challenged it in the High Court on the basis that Section 19 did not authorise it. Goldstein J held that inadequate dewatering at the northern west mine would result in the water reaching the appellant's mine and becoming polluted and the matter therefore fall within the provision of section 19 of the Act duly enabling the directive in question. The mines appealed against the decision and argued that the measures referred to in section 19(1) could not lawfully be taken beyond the boundaries of its land. The Supreme Court of Appeal also dismissed the appeal by the mines and upheld the decision of the court aqua.

⁷²Section 19(5)(a-d) Act 38 of 1998

⁷³ (7655/55,7655/55) [2006] ZAGPHC 47 (15 May2006)

The infiltration of acid mine drainage⁷⁴ into South Africa's surface and a groundwater system is wreaking havoc and the effects are both long term and far reaching. In August 2002 acid mine drainage started to gradually flow out of defunct underground mines in the West Rand near Krugersdorp polluting surface waters. In total an estimated 10 billion rand will be require to treat acid mine drainage via the neutralisation and desalination of the water, this will provide about 150 million litres of potable quality standard water. According to the department of water affairs, government and mines will assume a portion of the cost with a bulk of it falling to consumers who were never a part of the pollution in the first instance.

The Centre for Environmental Rights, VEJA requested access to the Master Plan of ArcelorMittal in February 2012 and also requested records relating to the closure and rehabilitation of the company's Vaal Disposal Site, situated in Vereeniging, after the company had illegally dumped hazardous waste here. ArcelorMittal refused both requests arguing that VEJA has no right to access same. VEJA applied to the High Court, which upheld VEJA's arguments and ordered AMSA to release the documents. AMSA took the matter to the Supreme Court of Appeal which dismissed their application with cost and ordered them to comply with the decision of the High Court⁷⁵. This is an indication that the courts are prepared to safeguard the environment and members of the community are also vigilant to ensure that big companies don't do as they like with the environment. The honourable Acting Deputy President Navsa went on to quote what was said by Al Gore a former vice –president of the United States and an international recognised environmental activist.⁷⁶

Section 19(3) vest certain powers in a catchment management agency however section 72(1) Provides that the powers of a catchment management agency vest in the Minister of Water Affairs in areas such as the KOSH area for which catchment management agency has not been established power is delegated to the Regional Director. In issuing the directives the Regional Director acted under the said delegation.

The court held that “the legislature intended by the term reasonable measures to lay down a flexible test dependent on the circumstances of each case. On the facts here

⁷⁴ Acid mine drainage is highly acidic water flowing from old mining areas, this water often contains high concentrations of metals, sulphides and salt

⁷⁵ *Company Secretary of Arcelormittal South Africa and Another v Vaal Environmental Justice Alliance*(69/2014)[2014]ZASCA 184 delivered on 26 November 2014

⁷⁶ Ibid page 33 line 84

it was in my view a reasonable anti-pollution measure to take steps to prevent ground water from the defunct mines reaching the active ones. The constitutional and statutory anti-pollution objectives would be obstructed if the measures required of the person referred to in section 19(1) were limited to measures on the land mentioned in the sub-section. If the choice were between an interpretation confining preventative measures to one's own land and a construction without that limitation it is clear that the latter interpretation would be consistent with the purpose of the Constitution and the former not⁷⁷. The appeal was dismissed with cost. As such the court endorsed the polluter and user pay principle. In this instance the pollution was temporal in nature and the court was not asked to address the thorny issue of acid mine drainage related to historical pollution.

The National Water Act provides for the control of emergency incidents such as any incident or accident on which a substance pollutes or has the potential to pollute a water resource or is likely to have a detrimental effect on a water resource⁷⁸. A responsible person must take all reasonable measures to contain and minimize the effects of the incident, undertake clean-up procedures, remedy the effect of the incident and take such measures as the catchment management agency may either verbally or in writing direct within the time specified by such institution. The catchment management agency may recover all reasonable cost it has incurred from every person responsible jointly and severally⁷⁹.

In *Lascon Properties (Pty) Ltd v Wadeville Investment Co (Pty) and another*⁸⁰. The escape of water containing injurious matter from the mine was an issue. The mines and works regulations prohibited the escape of such water without having been rendered harmless. The purpose of the regulation was to benefit the owner of land which might be polluted as a result of the actions of a mining company. The court held that the legislature would not have imposed an obligation to prevent the escape of noxious water without intending that persons harmed are thereby entitled to be compensated by the person permitting the water to escape. The legislature intended to provide a civil remedy to damage caused by a breach of the regulation extending beyond a mere interdict. The law of delict may be used to recover damages caused as a result of polluted water from mining activities.

⁷⁷ Paragraph 33 of the case

⁷⁸ National Water Act – section 20(1)(a) – (c)

⁷⁹ Section 20(7)

⁸⁰ 1997 (4) SA 578 (W)

The National Environmental management Act⁸¹ which governs the environment in its totality, entrenches the public trust doctrine as a crucial component of South African environmental governance by providing that “the environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people’s common heritage”⁸².

Section 34 (7) provides for vicarious liability of controlling officers of corporation which reads that:

‘Any person who is or was a director of a firm at the time of the commission by that firm of an offence under any provision listed in schedule 3 shall himself or herself be guilty of the said offence and liable on conviction to the penalty specified in the relevant law if the offence in question resulted from the failure of the director to take all reasonable steps that were necessary under the circumstances to prevent the commission of the offence: provided that proof of the said offence by the firm shall constitute prima facie evidence that the director is guilty under this sub-section’.

The Act provides that such manager, agent, employee or director maybe so convicted and sentenced in addition to the employer or firm. This provision is important since it applies to any prosecution listed in schedule 3 of the Act⁸³. This schedule is important to water pollution in respect of a person who unlawfully and intentionally or negligently commits any act or omission which pollutes a water resource; it targets managers, agents or employee for their act or omission. It provides an incentive to shy away from purposefully or negligently committing an offence because they will be held personally liable regardless of their position in the employment relationship or company. This may consequently stimulate the protection and conservation of the environment especially water resources. Directors, agents and employees of a company are expected to exercise their duty with care and ensure that their actions are not detrimental to the environment and their respective companies.

⁸¹Act 107 of 1998

⁸²Section 2 (4)(o) of the Act

⁸³Schedule 3 contain national and provincial legislatures including section 151 (1)(i) and (j) of the National Water Act 36 of 1998

In *Bareki & Another v Gencor Ltd & Others*⁸⁴ the plaintiffs in the matter alleged that between 1976 and 1981 the Griqualand Exploration and Finance Co (Pty) Ltd undertook operations to mine asbestos at the Bute Asbestos Mine and caused significant pollution in the mining and surrounding areas by the distribution of asbestos fibres. The remains of mining were still present in the form of asbestos dumps, a beneficiation plant, a mill and a haul road between the mill and beneficiation plant even though the mining activities were discontinued between 1981 and 1985. The plaintiff alleged that this pollution constituted a serious health risk to residents and occupiers of the areas concerned, and a significant threat to the environmental integrity of the region. The plaintiff wanted Gencor and the government (as the owner of the land) to be responsible for rectifying the pollution and or degradation. The plaintiff wanted to rely on the provisions of section 28(12) of The National Environmental Act 107 of 1998. The court's judgement failed to confirm the retrospective application of section 28 of the National Environmental Management Act 107 of 1998.

The basis for the court's finding was the common law presumption against retrospection, linked to the nature of the obligation set out in section 28. The court found that the obligation to take reasonable corrective measures in relation to pollution were strict and possibly even absolute. For this reason the court held that the legislature could not have intended the obligation to apply retrospectively.

This however has been rendered obsolete by legislative amendments of Act 14 of 2009. A new section 28 (1A) has been inserted which indicates that the duty defined in section 28(1) - which applies to the actual polluter applies to significant pollution and degradation of the environment that occurred before the commencement of NEMA; that arises or is likely to arise at a different time from the actual activity that caused the contamination, or that arises through an act or activity of a person that results in a change to pre-existing contamination. This can be taken as an expression of clear legislative intent that section 28 (1) applies retrospectively.

The Water Service Act⁸⁵ works in tandem with the National Water Act. In order to implement its objectives the Act establishes several water services institutions being the water service authorities, water service providers, water services intermediaries, water boards and water service committees. The water service authority must give

⁸⁴ 2006 (1) SA 432 (T)

⁸⁵ Act 108 of 1997

approval⁸⁶ to any person to dispose industrial effluent in any manner approved by the service authority; such water service authority may not unreasonably withhold the approval and may give approval subject to reasonable conditions. This power is important in relation to water pollution; as administrative control of pollution is set to become the principal pollution management mechanism, it is likely that the water authority will attach onerous pollution prevention or waste minimisation provision to its sewage disposal permits⁸⁷. The person must respect the reasonable condition attached to the sewage disposal permits, failure to adhere to these may result in the permit being withdrawn thereby effectively preventing the discharge of any trade effluent into the sewage disposal system. In practice, however, industries do not often comply with trade effluent permits and they are not detected due to lack of environmental practitioners to enforce and monitor the application of such permits. Qualified individuals are needed to work in environmental matters and force companies to comply with trade effluents.

Section 20 of the Health Act⁸⁸ states the following -

“(1) every local authority shall take all lawful, necessary and reasonably practicable measures-

- (a) to maintain its district at all times in a hygienic and clean condition;
- (b) to prevent the occurrence within its district of:
 - (i) any nuisance;
 - (ii) any unhygienic condition;
 - (iii) any offensive condition; or
 - (iv) any other condition which will or could be harmful or dangerous to the health of any person within its district or the district of any other local authority,or, where a nuisance or condition referred to in subparagraphs (i) to (iv), inclusive, has so occurred, to abate, or cause to be abated, such nuisance, or remedy, or cause to be remedied, such condition, as the case may be;
- (c) to prevent the pollution of any water intended for the use of the inhabitants of its district, irrespective of whether such water is obtained from sources within or outside its district, or to purify such water which has become so polluted...”

It enables every local authority to take all lawful, necessary and reasonable

⁸⁶In terms of section 6 or 7 of the Act

⁸⁷I Sampson Deloitte & Touché. Introduction to a legal framework to pollution management in South Africa. WRC Report No TT 1949/01 March 2001 page 102.

⁸⁸Health Act 63 of 1977

practicable measures to prevent the pollution of any water intended for the use of the inhabitants of its district irrespective of whether such water is obtained from sources within or outside its district or to purify such water which has become polluted⁸⁹. It also gives powers to the Minister to pass regulations in this matter in order to avoid conditions that poses a threat to the population; any person who contravenes or fails to comply with any of its provision including the prevention of water pollution is guilty of an offence.

The holder of reconnaissance permission, prospecting rights, mining permit or retention permit is responsible for any environmental damage, pollution or ecological degradations as result of his or her reconnaissance prospecting or mining operations which may occur inside and/or outside the boundaries of the area to which such rights permit or permission relates⁹⁰. A drastic measure is made by providing that a director of a company or members of a close corporation are jointly and severally liable for any unacceptable negative impact on the environment including damage, degradation, or pollution purposefully or inadvertently caused by the company or close corporation which they represent or represented.

Mining activities may pollute water and have disastrous consequences on the environment. The Minister has made regulations on the use of water for mining and related activities aimed at the protection of water resources⁹¹, these regulations contain measures to deal with water pollution that may result from mining activities. They compel every person in control of a mine or activity to take reasonable measures to prevent waste water or any substance which causes or is likely to cause pollution of a water resource from entering any water resource, either by natural flow or by seepage⁹². He or she must retain or collect such substance or water containing waste for use, reuse, and evaporation or for purification and disposal in legally appropriate terms. Everyone in the control of a mine or activity must take reasonable measures to design, modify, locate, construct and maintain all water systems, including residue deposits in any area so as to prevent the pollution of any water resource. The regulations provide for offences and penalties against anyone who contravenes any provision of preventing water pollution in mining activities.

⁸⁹Section 20 (1)(c)

⁹⁰Mineral and Petroleum Resources Development Act 28 of 2002, section 38(1)(e)

⁹¹GN 704 in GG 20119 dated 4 June 1999

⁹²Ibid regulation 7 (a)

CHAPTER FOUR

WATER POLLUTION LEGISLATION IN THE UNITED KINGDOM

4.1. INTRODUCTION

England, Wales, Scotland and Northern Ireland form the United Kingdom. Legislation for water in England and Wales dates from Victorian times, when Acts of parliament were passed to give local authorities, statutory boards and companies the power they needed to provide water and sewerage services expanding centres of pollution⁹³. In England there are thousands of kilometres of watercourses, hundreds of designated bathing waters and many ponds, canals and streams. Many of these water bodies are in good condition and enjoyed and valued by communities⁹⁴.

The British approach to water pollution control has traditionally been founded on defining quality objectives for receiving waters in the light of which varying emission standards are set individually.⁹⁵ Integrated pollution control addresses the cross media impact by providing a single authorization to be granted for prescribed discharges to air, land and water, account can be taken of the impact on each medium and allowance made for the interaction of one on another⁹⁶. Persons must respect conditions enumerated in the emission standards. They also have to avoid the entry of any polluting matter to the controlled waters. Failures to comply with emission standards or other water pollution laws are a criminal offence.

4.2. WATER POLLUTION LEGISLATIONS

The Water Resources Act⁹⁷ came in to effect in December 1991 along with four other pieces of legislation namely the Water Industry Act of 1991, Land Drainage Act of 1991, Statutory Water Act of 1991, and the Water Consequential Provisions Act of 1991. The purpose of these Acts was to consolidate existing water legislation which was previously spread out over twenty pieces of legislation. The Act governs the

⁹³ Water UK, 2014. Legislation available: www.water.org.uk/policy/positions/legislation. Accessed 04/06/14

⁹⁴ *ibid*

⁹⁵ Turtle T. "Approaches to enforcement of water pollution control regulations in the UK ". In Thomas P. Water pollution law and liability(1993) 237 at 240

⁹⁶ Jordan A. 1993. Integrated pollution control and the evolving style and structure of environmental regulation in the United Kingdom. The centre for social and economic research on the global environment (CSERGE), University OF East Anglia and university College London. Working paper 93-01 available: www.cserge.ac.uk/sites/default/files/wm-1993-01.pdf.

⁹⁷ Water Resources Act of 1991 as amended by the Water Act of 2003

quality and quantity of water by outlining the functions of the Environment Agency; it sets out offences relating to water, discharge consents and possible defences to the offences. The most notable legislation to amend this Act is the Water Act of 2003. Part iii of the Water Resource Act and the Regulations made under it are concerned with the protection of controlled waters.⁹⁸

In terms of Section 85(1) it is an offence to cause pollution to controlled waters, the purpose of the section is to impose criminal liability on those who causes pollution to natural water resources.

A person contravenes this section if:

- He causes or knowingly permits any poisonous, noxious or polluting matter, or any solid waste matter to enter any controlled waters.
- He cause or knowingly permit any matter other than trade effluent or sewerage effluent to enter controlled waters by being discharged from a drain or sewer in contravention of an imposed prohibition under section 86.
- He causes or knowingly permits any trade effluent or sewerage effluent to be discharged into any controlled waters or from land in England and Wales through a pipe into the sea outside seaward limits of controlled waters.
- He causes or knowingly permits any trade effluent or sewage effluent to be discharged in contravention of any prohibition imposed under section 86 from a building or from any fixed point onto or into any land, into any waters of a lake or pond, which are not inland freshwaters.
- He causes or knowingly permits any matter whatever to enter any inland freshwaters so as to tend (either directly or in combination with other matter which he or another person causes or permits to enter those waters) to impede the proper flow of the waters in a manner leading or likely to lead to a substantial aggravation of pollution due to other causes and the consequences of such pollution.

⁹⁸ The definition of controlled waters includes relevant territorial waters, coastal, inland freshwaters (including lakes and ponds) and ground waters.

In *Empress Car Co (Abertillery) Ltd v National Rivers Authority*⁹⁹ the interpretation of Section 85(1) was in issue. The appellant company maintained a diesel oil tank in a yard on its premises, which drained directly into a river. The tanker was surrounded by a bund to contain the spillage and the appellant had overridden that protection by fixing an extension pipe to the outlet of the tank so as to connect it with a smaller drum standing outside the bund. The outlet from the tank was governed by a tap which had no lock. It appeared that an unknown person had opened the tap and as a result the entire contents of the tank ran into the drum, overflowed into the yard and passed down a storm drain into the river. The National Rivers Authority charged the appellants with causing polluting matter to enter controlled water from its premises contrary to section 85(1) of the Water Resource Act of 1991. Lord Hoffman quoted with approval the analysis of Lord Wilberforce in *Alpha Cell Ltd v Woodward*¹⁰⁰ of the two limbs of section 2 (1) (a) of the Rivers (Prevention of Pollution) Act of 1951 which was in the same terms as section 81(1) of the 1991 Act. The sub-section evidently contemplates two things namely:

1. causing, this must involve some active operation or chain of operations which results in the pollution of the stream,
2. knowingly permitting, which involves a failure to prevent the pollution which failure however must be accompanied by knowledge?

The sub-section imposed strict liability in the sense of intention or negligence. Strict liability was imposed in the interest of protecting controlled waters from pollution.

If the defendant did something which resulted in a situation in which the polluting matter would escape, but a necessary condition of the actual escape which happened was also the act of a third party or a natural event, the justices could consider whether that act or event should be regarded as a normal fact of life or something extra-ordinary. If it was in the general run of things, a matter of ordinary occurrence, it will not negate the casual effect of the defendant's acts, even if it was not foreseeable that it would happen to that particular defendant or take that particular form. If it can be regarded as something extra-ordinary it will be open to the justice to hold that the defendant did not cause pollution.

⁹⁹[1988] 1 ER 481 (HL)

¹⁰⁰[1972] 2 ER 475 (HL)

Whether an event was ordinary or extra-ordinary was one of the facts and degree to which the justice should apply their common sense and knowledge of what happened in the area. From the above facts it is clear that the appellant has done something by maintaining a diesel oil tank on its land and it has caused the oil to enter controlled waters, so the appeal was dismissed.

In *Express Ltd (trading as Express Dairies Distribution) versus The Environmental Agency*¹⁰¹ the defence of causing pollution of waters was in issue. An employee of the defendant dairy company was driving a milk tanker along a motor way in the course of the company's business. As a result of a tyre blow out, the delivery pipe was sheared causing several thousand litres of milk to escape from the tank. The driver pulled onto the hard shoulder and stopped at a point where two drains fed into a brook which constituted controlled waters. The milk from the tank entered the brook. The company was subsequently charged with causing polluting matter to enter controlled waters. There was no evidence given as to what were the intention of the driver on pulling over onto the hard shoulder, but the justices assumed that he had done so in order to avoid danger to life or health nevertheless the company was convicted. The company appealed to the Divisional Court, the court held that the defence, provided by section 89(1) of the 1991 Act to the offence of causing polluting matter to enter controlled waters was available to a person whose act in causing that entry was done in an emergency in order to save life or health. Parliament recognised that some of those acting in an emergency should be excused. The defence succeeded and the conviction was set aside. The significance of this case was that milk was considered as a water polluting substance. The appeal succeeded because the appellant committed a pollution of water in an emergency situation in order to avoid an accident and probably save life.

The Water Resources Act of 1991, the Water Industry Act of 1991 and Water Act of 1989 contain a specific provision enabling a body corporate, directors and other officers to be prosecuted for offences committed by their companies. The water Resources Act provides that:

- “where a body corporate is guilty of an offence under this Act and that offence is provided to have been committed with the consent or connivance of or to be attributable to any neglect on the part of a director, manager, secretary or

¹⁰¹[2003]2 ALL ER 778(QBD)

other similar officer of the body corporate or any person who was purporting to act in any such capacity, then he as well as the body corporate shall be guilty of that offence and shall be liable to be proceeded against and punished accordingly”.

In *Huckerly v Elliot*¹⁰² the court interpreted the meaning of the terms consent, connivance and neglect. The court held that consent exists where ‘a director consent to the commission of an offence by his company and he is well aware of what is going on and agrees to it’. Connivance means that a director ‘connives at the offences committed by the company, he is equally aware of what is going on but his agreement is tacit, not actively encouraging what happens but letting it continue and saying nothing about it’. Where the offence is attributable to neglect, in the absence of authority on the point it would seem that the offence which is being committed may well be without his knowledge but it is committed in circumstances where he ought to know what is going on and he fails to carry out his duty as a director to see that the law is observed. This interpretation might be of assistance to other courts when dealing with controlling officers of a body corporate in cases of alleged water pollution.

In *National Rivers Authority v Alfred Mc Alpine Home East Ltd*¹⁰³, the issue was whether or not a company would be held liable for pollution of water caused by its junior employees. The respondent company was engaged in building houses on a residential development. The wet cement was washed into a river during the building operations carried out by the company. In May 1992 the National Rivers Authority inspected the stream and found the water to be cloudy downstream of the building site, with a number of dead and distressed fish. The employees admitted liability. The applicant charged the respondent with causing polluting matter, wet cement to enter controlled waters, contrary to section 85(1) of the 1991 Act. Justices dismissed the charge and held that the applicant had failed to show that the company itself was liable because neither the site agent nor the site manager were of a sufficient senior standing within the company to enable them to be held categorised as persons whose acts were the acts of the company.

On appeal the court held that a company will be criminally be liable for causing pollution which resulted from the acts or omissions of its employees acting within the

¹⁰² [1970] 1 All ER 189 at 194

¹⁰³ [1994] 4 All ER 286 (QBD)

course and scope of their employment when the pollution occurred, regardless of whether they could be said to be exercising the controlling mind and will of the company, save only where some third party acted in such a way as to interrupt the chain of causation. The appeal was allowed. This appears to be a straightforward application of the principle of vicarious liability, but it does not illustrate the need for companies to establish proper environmental management systems.¹⁰⁴

¹⁰⁴ S Bell & D McGillivray, *Environmental Law* 6th ed. (2006)740.

CHAPTER FIVE

WATER LEGISLATION IN INDIA

5.1. INTRODUCTION

Water pollution is a major environmental issue in India¹⁰⁵. The largest source of water pollution is untreated sewage; other sources of pollution include agricultural run-off and unregulated small scale industry¹⁰⁶. Most rivers, lakes and surface water in India are polluted. There is a large gap between generation and treatment of domestic waste water in India. The problem is not only that India lacks sufficient treatment capacity but also that the sewage treatment plants that exist do not operate and are not maintained. A study carried out by the World Health Organisation (WHO) in 1992 reported that out of India's 3119 towns and cities just 209 have partial sewage treatment facilities, and only 8 have full waste water treatment facilities¹⁰⁷. Downstream the river water polluted by the untreated water is used for drinking, bathing and washing¹⁰⁸. The source of surface water pollution is lack of toilets and sanitation facilities¹⁰⁹.

India is in fact the first country in the world to make constitutional provisions for the protection and improvement of the environment. In terms of Article 48-A of chapter IV¹¹⁰, the state must take reasonable measures for the protection and improvement of the environment and for safeguarding the forest and wildlife of the country. It is the fundamental duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures. The water¹¹¹ and the air quality laws have been in place from as far as 1989 to deal with the control of hazardous waste and pollution control to supplement the constitutional provisions.

India lacks an umbrella framework to regulate freshwater in all dimensions. Common law principles and irrigation acts from the colonial period as well as more recent

¹⁰⁵ J. Rodgers, 2013. India's polluted Ganges river threatens people's livelihood. Deutsche Welle. Available: www.dw.de/indias-polluted-ganges-river-threatens-people-s-livelihoods. Accessed 22/05/13

¹⁰⁶ 104 *ibid*

¹⁰⁷ D. Chapman 1996. Water quality assessments- a guide to use of biota, sediments and water in environmental monitoring. WHO. E.&F.N. Spon an imprint of Chapman & Hall (2ed)

¹⁰⁸ 104 *ibid*

¹⁰⁹ 104 *ibid*

¹¹⁰ Principles of the state policy of the constitution.

¹¹¹ Water (prevention and control of pollution Act ,1975 Chapter V)

regulation of water quality and the judicial recognition of human right to water constitute the legislative frame work of India. It is difficult to identify a coherent body of comprehensive law concerning water; this is related to the fact that distinct concerns have been addressed in different enactments. This is also due to the division of powers between the centre and the states and the fact that water regulation is mostly in the hands of the state.

The use of water and its conservation lies with the state. The intervention of the central government in water regulations is limited by the constitutional scheme; the importance of national regulations in water has been recognised in certain areas. Statutory water law also includes a number of pre and post-independence enactments in various areas. These includes laws on embankments, drinking water supply, irrigation, floods, water conservation, river water pollution, rehabilitation of evacuees and displaced persons, fisheries and ferries.

5.2 WATER LEGISLATION IN INDIA

Some of the basic principle of water law applicable today in India is derived from irrigation acts. The early Northern India Canal and drainage Act of 1873 sought for instance to regulate irrigation, navigation and drainage in Northern India. One of the long term implications of this act was the introduction of the right of the government to use and control for public purposes the water of all rivers and streams flowing in natural channels and of all lakes¹¹². The Madhya Pradesh Irrigation Act of 1931 went much further and asserted direct state control over water by stating that “all rights in the water of any river, natural stream or natural drainage channel, natural lake or other natural collection of water shall vest in the government”¹¹³. In general water law is largely state based; this is due to the constitutional scheme which since the government of India Act, 1935 has in principle given power to the states to legislate in this area.

Thus with regard to water pollution, parliament did adopt an act in 1974 called the Water Act¹¹⁴. This Act seeks to prevent and control water pollution and maintain and restore the wholesomeness of water. It gives power to water boards to set standards and regulations for prevention and control of pollution.

¹¹² Preamble Canal and Drainage Act of 1873 (Act VIII OF 1873)

¹¹³ Article 26, Madhya Pradesh Irrigation Act of 1931

¹¹⁴ Water (Prevention and Control of Pollution) Act of 1974

The Central Pollution Control Board, a Ministry of Environment & Forests Government of India entity has established a National Water Quality Monitoring Network comprising 1429 monitoring stations in 27 states and 6 in Union Territories on various rivers and water bodies across the country. This effort monitors water quality year round. The control board is created by the Act, which is India's national body for monitoring environmental pollution; it undertook a comprehensive scientific survey in order to classify river waters according to their designated best use. This report was the first systematic document that formed the basis of the Ganga Action Plan (GAP). It detailed land use patterns, domestic and industrial pollution loads, fertiliser and pesticide use, hydrological aspects and river classification; the principle aim was to intercept and divert waste from urban settlement away from the river. The GAP was only the first step in river water quality management. Its mandate was limited to quick and effective, yet sustainable intervention to contain the damage.

The existing legal framework concerning water is complemented by a human rights dimension. Although the constitution does not specifically recognise a fundamental right to water, court decisions deem such right to be implied by Article 21¹¹⁵. The right to water can be read as being implied in the recognition of the right to clean water. In *Subhash Kumar v State of Bihar*, the Supreme Court recognised that the right to life “includes the right of enjoyment of pollution free water and air for full enjoyment of life”¹¹⁶.

In the *Vardar Sarovar* case, the Supreme Court went further and directly derived the right to water from Article 21. It stated that ‘water is the basic need for the survival of the human beings and is part of right to life and human rights as enshrined in Article 21 of the Constitution of India’¹¹⁷. While the recognition of a fundamental right to water by the courts is unequivocal, its implementation through policies and acts is not as advanced as one would think.

More than 400 million people live along the Ganges River which is considered a source of spiritual purification for devout Hindus; they use the river for bathing for ritual purposes which are regarded holy by the Hindus¹¹⁸. While modern pollution is forcing people to break ties with the river, Hindu scholar Krishna Kant Shukla argued that the Ganges's unique place in Hindu cosmology means the river will remain at

¹¹⁵Article 21 is the right to life principle

¹¹⁶Paragraph 7, *Subhash Kumar v State of Bihar*, AIR 1991 SC 420

¹¹⁷AIR 2000 SC 3751

¹¹⁸104 *ibid*

the heart of Hindu life¹¹⁹. The National River Conservation Plan was an effort to improve the water quality starting with the Ganga Action Plan whose programmes on water pollution control expanded to the Ganges River, Yamuna, and Deodar and Gomati rivers¹²⁰.

¹¹⁹ 104 *ibid*

¹²⁰ MOEF (Ministry of environment and forest, government of India), 2014. Ganga Action Plan Phase-II. National Ganga River basin authority. Available: www.moef.niic.in/sites/default/files/ngrba/gangaactionplan2.html. accessed 30/05/2014

CHAPTER SIX

6.1 COMPARATIVE ANALYSIS OF THE LEGISLATIONS

Legislation in South Africa, the United Kingdom and India creates offences and penalties for water pollution in different manners. Water polluters are punished by imposing fines, imprisonment or both. Remedial orders may be made in order to prevent or minimise the effects of water pollution or to restore water to its previous conditions. Policy statements regarding water pollution control can be found within the legislative framework of these countries.

In most instances corporations pollute water in their activities and measures have been taken to punish corporate bodies as well as corporate officers. Government statutes and constitutional documents often include paragraphs about environmental policies. The protection and conservation of natural resources is crucial especially a resource such as water which plays a vital role not only in economic development but also in social upliftment.

In South Africa¹²¹ and the United Kingdom¹²² legislation imposes an obligation on the owner, occupier or controller of the land to take all reasonable measures to prevent water pollution from occurring, continuing or recurring. If they fail to perform their duties, the relevant authority may take all necessary steps to remedy the situation. It may recover all reasonably incurred costs from the responsible person. South Africa has a joint and several liability provisions to recover such costs from the responsible persons. However the latter maybe unable to pay for the incurred costs and the relevant authority may lack sufficient funds to continue performing its operations.

In South Africa, the Constitution contains a class action that may be used to enforce an environmental right. The class action may be used by persons to force others to comply with trade effluent permits. The persons who can bring a class action are:

- a. anyone acting as a member of, or in the interest of a group or class of persons,
- b. anyone acting in the public interest,
- c. an association acting in the interest of its members¹²³.

¹²¹ National Water Act 38 of 1998 section 19

¹²² Water Resources Act section 161(1)

¹²³ Constitution of the Republic of South Africa Act 108 of 1996, section 32(c), (d) and (e).

South Africa should create a possibility for persons to bring an action against a catchment management agency or other water pollution institutions when they unreasonably fail to perform a duty which is not at their discretion. This class action may force an unwilling authority to satisfy its duties and avoid or minimise the effects of water pollution.

In all the three countries statutes regulate the discharge of waste or trade effluent into a water resource. The discharger must have a permit and comply with its restrictions, unless the activity falls under the exceptions. Non-compliance with permit conditions constitutes a criminal offence or a court may make an award of damages against the accused in favour of the person who suffered a loss as a result of the offence or to remedy the situation. Vicarious liability is used to punish corporations for the acts or omission of their employees that pollute waters, even if they do not exercise the directing mind or will of the company unless some third party interrupts the chain of causation.

Environmental statutes usually provide that where a corporation has committed an offence under the legislation, then directors and other managers of the corporation are deemed to be guilty of the same offence. Environmental law does not allow corporate officers to hide behind a legal structure of the corporation. A person may escape liability if he or she proves to the court that he or she was not in a position to influence the conduct of the corporation in relation to the transgression. Or he or she, if in such position used all due diligence to prevent the conduct by the corporation.

South African environmental laws are still new and although the judiciary tries their level best to interpret same, most of them are not in a position to interpret the law correctly which leads to polluters not held accountable for their deeds. In some instances the authorities are also reluctant to hold polluters accountable because of their political and social standing or connections. There is a provision for clean-up measures and recovery. This happens where the polluting matter appears to be, or has been present in any controlled waters. In these circumstances, the agency may perform works and operations in order to remove or dispose of, the polluting matter. It may also remedy or mitigate pollution caused to the waters.

Although India has made significant changes in its environmental challenges, much work still needs to be done. According to the World Bank the country has made one of the most rapid progresses in enhancing its environmental issues between the

years 1995 and 2010. The main source of water pollution in India is due to untreated sewerage contaminating surface and underground water. Rivers such as the Ganges, Mithi and Yamuna flow through urban areas thus get polluted. The current treatment facilities are not only functioning under capacity due to poor maintenance they cannot treat the expanding volume of sewerage due to population increase. Other sources of water pollution that are of great concern are agricultural runoff and small scale factories along the rivers and lakes of India.

Even though India has revised its National Water Policy in 2002 to encourage community participation and decentralize water management, the country's byzantine bureaucracy ensures that it remains a "mere statement of intent". Responsibility for managing water issues is fragmented among a dozen different ministries and departments without any coordination. The government bureaucracy and state run project department has failed to solve the problem, despite having spent many years and \$140 million on this project¹²⁴

United Kingdom statutes have specific provisions that allow a body corporate, directors and other officers to be prosecuted for offences committed by the company¹²⁵. This materialises when a company is guilty of an offence which is proved to have been committed with the consent connivance or neglect of any directors, secretaries or managers or other similar officers of the body corporate. This provision does not only target directing officers but includes other individuals in the corporation who may commit an environmental crime by their act or omission. The responsible person as well as the corporation is guilty of the same offence and liable to be punished accordingly. South Africa should adopt this approach as it will assist to punish corporations, directing officers and other individuals when an environmental crime is committed.

¹²⁴ Yamuna: Story of a river being poisoned to death. The Hindu on July 6, 2012 issue.

¹²⁵ Water Resource Act (sec 217), Water Industry Act of 1991 (sec 210) and Water Act of 1989 (sec 177)

CHAPTER SEVEN

7.1. CONCLUSIONS

It is evident that South African water pollution control legislation has changed substantially in recent years. Presently South African water resources are under severe threat, primarily as a result of past mining practises. We have a duty to halt any decline and reverse the damage we have done over many decades to our water ecosystems and minimise future risks in adapting to climate change. As water is a scarce resource and if not well preserved we are running a danger of not having clean water in years to come.

Economic growth and natural environment are mutually compatible. Sustainable economic growth relies on the health of the natural environment including water bodies and the benefits it provides, often referred to as ecosystem services. The quality of water bodies determines the type of animals and plants that can healthily live in them.

Water used for domestic purposes on farms mostly comes from protected sources but water coming from unprotected sources such as dams does occur which then exposes farm residents to pesticides through various environmental routes including water. Although there is regular water monitoring in farming areas same is not done for pesticides. The National Development Plan states that food, fuel and water are inter connected particularly in the context of climate change and their impact on one another¹²⁶.

Water resource management, including water quality management is an exclusive National competency. Water quality management is the responsibility of the Minister of Water Affairs and Forestry which consist of the following functions:

1. Policy development, catchment building, specialist report, authorization and audit services at a strategic level which is provided by the Department's Directorates of Water Quality management.
2. Policy implementation, operations, control and monitoring services at an operational level which is provided by the Department's nine Regional Offices.

¹²⁶ National Planning Commission , National Development Plan 2030: Our Future make it work ,2012.95

3. Scientific support services which is provided by the department's Institute for Water quality studies.¹²⁷

This is an indication that our government is in a mission to ensure that there is enough clean water and further that there will be water capable of consumption for the future generation

7.2. RECOMMENDATIONS

Statutes governing water pollution need to criminalise a continuing offence which arises when an offence continues after a notice has been served on the person to cease the unlawful activity or if no notice was served, after a conviction of the offender. It is recommended that statutes should criminalise a continuing offence and such an offence must be punished per day of violation as this may encourage water polluters to stop committing the offence.

The National Water Act has to create a permanent fund to remedy polluted waters, if the offender is unable or fails to take reasonable and necessary measures or cannot be found. The Act must include a provision that requires those carrying out activities that might cause pollution to our waters to pay deposits before commencing with such activities in the fund and if pollution of our waters happens the said deposit can be used to remedy the polluted waters as it would be unfair to expect taxpayers who are not involved in the pollution of the water to contribute to such a fund. If polluted waters are not immediately remedied they may cause a disastrous effect on the environment and have far reaching consequences.

As a general rule it should be ensured that only regulations that are enforceable are actually implemented. If the existing enforcement capacity is deemed insufficient, regulation should be simplified or abandoned. Regulations and management procedures made at national level need not necessarily apply uniform conditions for the entire country, but can take account of regional variations in water pollution and socio- economic conditions. Current policy frame works do not provide the necessary clarity with regards to delegation of powers between the different government departments at the local, provincial and national level.

¹²⁷ https://www.dwarf.gov.za/dir_wqm/wqmNav.htm accessed on 09/03/2015

The efficacy of the various policies would be greatly enhanced if the national legislation were more rational and aligned, because it would eliminate any ambiguity. The national government is responsible for water in South Africa which means that the other spheres of government do not have a part to play in ensuring that the water is preserved. Another broad shortfall of the existing policy framework is that it puts government in a reactionary rather than proactive position, as demonstrated by the pricing structures and enforcement mechanism used to deal with polluters such as the polluter pay principle.

By-laws can be made by a legally established corporate body, such as a district or provincial government and can for example determine the regulation and pollution of local water resources. However by-laws made by lower level institutions cannot contradict those made by higher level institutions.

Political commitment, efficient administrative implementation and enforcement, and adequate compliance with the provisions of the system may ultimately result in achieving the overall objectives of the Act which are inter alia to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled alongside sustainable imperatives. If politicians allows the law to be applied fairly without favour or prejudice to those who commits environmental crimes irrespective of their political affiliations or social standing the problem can be curbed, as sometimes the hands of those who must enforce the law are tightened up by the interference of politicians.

Publicity orders are recommended to be included in South African legislation dealing with water pollution. If an environmental crime such as water pollution has been committed, the responsible person must be forced to publicise such offence, its environmental consequences, penalties and other orders may damage the prestige of the offender and can have a significant impact on deterring persons from polluting water. The orders are made to the persons affected by or interested in, the conviction and may appear in the offender's annual report. Many corporations are sensitive about their prestige and will ensure that the offence does not reoccur. Only courts may authorise publicity orders.

There is a need to provide environmental education to offenders, employees and contractors. Sometimes environmental offences are committed as a result of ignorance from the persons concerned. To rectify this situation the catchment

management agency, other water pollution institution or court may order the offender to attend, or cause employees or contractors to attend, a specified training course that deals with water pollution. The offender can also organise a training course for his or her employees. Public education can also play an important role in educating and making ordinary people to be aware of the dangers of water pollution and the environment so that people can understand and value water and take action to improve their local rivers and the environment around them.

Environmental health officers are currently the public officials responsible for water monitoring in farming areas and they would probably be responsible should systematic water monitoring for pesticides be implemented in future.

There is a shortage of personnel in the field of environmental law specifically in water pollution issues. The police do not have the necessary skills and expertise to deal with environmental crimes, when matters are taken to court they are not ready to be proceeded with and most of them end up being withdrawn or the perpetrators are acquitted on technicalities. The Department of Justice should include environmental courses in the training programmes of prosecutors and magistrates and designated courts with prosecutors and magistrates should be allocated to environment and water pollution matters so that they can build expertise in this field.

The United Kingdom doctrine of wilful blindness imputes knowledge of the offence to the responsible persons and therefore secures their convictions for environmental crimes. If same can be used in South Africa it will assist to punish corporations directing officers, managers and other individuals in the body corporate when an environmental crime has been committed.

The South African statute prohibits any person from discharging trade effluent into a water resource unless the discharger has a permit and respect its conditions¹²⁸. Failure to comply with conditions in a permit is a criminal offence. The statute focuses on the intention or negligence of the offenders and provides different punishment for water polluters. South Africa can criminalise knowing endangerment of people's lives by holders of permits that knowingly places another person in imminent danger of death or serious bodily injury by ignoring the conditions of their permits.

¹²⁸ Water services Act 108 of 1997, section 7(2)

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