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A COMPARATIVE REVIEW OF GERMAN AND SOUTH AFRICAN ENVIRONMENTAL LAW WITH SPECIAL REFERENCE TO POLLUTION CONTROL

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by

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A Comparative Review of German and South African Environmental Law with Special Reference to Pollution Control

Summary

In this dissertation the principles, instruments and remedies of German and South African environmental law are examined, as far as they are relevant for pollution control. The purpose is to investigate whether the two countries can learn from each other.

In the beginning three principles are discussed which have been formative on German environmental law. The principle of prevention which aims at minimising pollution regardless of its actual hazard and the polluter-pays principle are considered important for an effective environmental law. In general the so-called principle of co-operation appears to have no specific effectivity.

Administrative law is then examined. While pollution-control procedures are similar in the two countries, there are substantial differences as far as judicial control of administrative acts is concerned. In Germany permits for emitters can be challenged by anybody living in the vicinity of a polluting installation; German

administrative courts may always reconsider the merits of an administrative decision. In South Africa concerned citizens may not contest the licence to operate an installation, unless their real or personal rights are infringed; even in the latter case the courts may normally not consider the merits a decision.

In Germany environmental impact assessments and public participation are obligatory in many cases. While in South Africa their implementation is left to the discretion of the Minister of Environment Affairs and other ministers involved.

The main difference between German and South African criminal law is that the penalties, in particular fines, are far lighter in South Africa.

Environmental protection by means of private-law remedies differs considerably in the two countries. The injunction is a primary remedy in Germany which requires the infringement of real or personal rights of the plaintiff. The interdict under South African law is a subsidiary remedy only available where an action for damages does not afford adequate protection; yet the interdict can be based upon the infringement of rights of personality.

Under the new UmweltHG (Environmental Liability Act) strict liability and a presumption of causality has been introduced in Germany for major installations and activities. In South Africa the burden of proving a causal relationship is always upon the plaintiff; strict liability has only been implemented for nuclear installations.

In Germany various emission fees and tax concessions are in force or under consideration. In South Africa no financial incentives have been introduced to date to promote emission control.

Lastly environmental protection by a means of a human right or legislative objective is examined. The intention is to insert the objective into the German constitution that the environment is to be protected. A similar idea of including a legal principle of environmental protection into the Environment Conservation Act has been abandoned in South Africa.

It is suggested that pollution fees should be introduced on all levels in order to minimise pollution. Such fees have in principle proved to be effective Tax law should be supplemented by an improved civil, administrative and criminal law.

In the field of civil law strict liability and a relaxation of the burden of proving causality is advisable. Public participation procedures should become mandatory in licensing procedures. Criminal penalties should be increased considerably.

In Germany it is advisable to introduce the possibility for an injunction if rights of personality are infringed since environmental degradation does not necessarily cause violation of real or personal rights.

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CONTENTS

ABBREVIATIONS

Bek.d.BMI: Bekanntmachung des Bundesinnenministeriums (Official Proclamation of the Federal Ministry of the Interior).

BAnz: Bundesanzeiger (Federal Government Gazette)

BGBl: Bundesgesetzblatt (Federal Law Gazette)

BGH: Bundesgerichtshof (Federal Supreme Court)

BGHSt and BGHZ: amtliche Entscheidungssammlung des BGH (Decision of the Federal Supreme Court, official reports) - St: in Strafsachen (criminal jurisdiction), Z: in Zivilsachen (civil jurisdiction)

BR-Dr: Bundesratsdrucksache (Official Reports of the Senate of the German Federal Parliament)

Bt-Dr: Bundestags-Drucksache: (Official Reports of the German Federal Parliament)

BVerfG: Bundesverfassungsgericht (Federal Constitutional Court)

BVerfGE: amtliche Entscheidungssammlung des BVerfG (Decision of the Federal Constitutional Court, official reports).

BVerwG: Bundesverwaltungsgericht (Federal Administrative Supreme Court)

BVerwGE: amtliche Entscheidungssammlung des BVerwG (Decision of the Federal Administrative Supreme Court, official reports)

CILSA: The Comparative and International Law Journal of South Africa, Pretoria.

EPL: Environmental Policy and Law, Bonn (Periodical)

GMBl: Gemeinsames Ministerialblatt (joint gazette of the Federal Ministries)

JZ: Juristenzeitung, Tübingen (Periodical)

OJ: Official Journal of the European Community

OVG: Oberverwaltungsgericht (Administrative Court of Appeal).

NJW: Neue Juristische Wochenschrift, Munich & Frankfurt on Main (Periodical)

RG: Reichsgerichtshof (Supreme Court of the German Reich, 1871-1945)

RGBl: Reichsgesetzblatt (Law Gazette of the German Reich, 1871-1945)

RGSt and RGZ: amtliche Entscheidungssammlung des RG (Decision of the Supreme Court of the German Reich official reports) - St: in Strafsachen (criminal jurisdiction), Z: in Zivilsachen (civil jurisdiction)

THRHR: Tydskrif Vir Hedendaagse Romeins-Hollandse Reg, Durban (periodical)

UPR: Umwelt-und Planunsrecht (periodical)

ZfU: Zeitschrift für Umweltpolitik und Umweltrecht, Frankfurt on Main (periodical)

RELEVANT LEGISLATION

General

Germany

BGB (Bürgerliches Getzbuch) - Civil Code of 1896 (RGBl p195; as amended in 1990, BGBl I p1456)

BNatSchG (Bundesnaturschutzgesetz) - Federal Nature Conservation Act of 1987 (BGBl I p889; as amended in 1990, BGBl I p205)

EC-EIA - Directive on Environmental Impact Assessment of 1985 (85/337/EEC)

GG (Grundgesetz) - Constitution (Basic Law) of the Federal Republic of Germany of 1949 (BGBl I p1; as amended in 1983, BGBl I p1481)

OWIG (Ordnungswidrigkeitengesetz) - Minor Offences Act of 1987 (BGBl I p602; as amended in 1988, BGBl I p606).

StGB (Strafgesetzbuch) - Criminal Law Act of 1987 (BGBl I p945; as amended in 1990, BGBl I p1163)

UmweltHG (Umwelthaftungsgesetz) - Environmental Liability Act of 1990 (BGBl I p2634)

UStatG (Gesetz über Umweltstatistiken) - Environmental Statistics Act of 1980 (BGBl I p311; as amended in 1986, BGBl I p2089)

UVPG (Gesetz über die Umweltverträglichkeitsprüfung) - Environmental Impact Assessment Act of 1990 (BGBl I p205; as amended in 1990, BGBl I p1080)

VwVfG (Verwaltungsverfahrensgesetz) - Administrative Proceedings Act of 1976 (BGBl I p1253; as amended in 1976, BGBl I p1749)

VwGO (Verwaltungsgerichtsordnung) - Administrative Courts Act of 1960 (BGBl I p17; as amended in 1986, BGBl I p2191)

South Africa

Criminal Procedure Act 51 of 1977 (as amended in 1989)

Environment Conservation Act 73 of 1989

Republic of South Africa Constitution Act 110 of 1983 (as amended in 1989).

Air and Noise Pollution

Germany

BImSchG (Bundes-Immissionsschutzgesetz) - Federal Immission Control Act of 1990 (BGBl I p880)

BImSchV (Verordnungen zur Durchführung des BImSchG) - Regulations for the Implementation of the Federal Imission Control Act

1st BImSchV - Furnaces Regulation of 1988 (BGBl I p1059)

2nd BImSchV - Restriction of the Emission of Halogenous Hydrocarbons Regulation of 1986 (BGBl I p571)

3rd BImSchV - Sulphur Content of Light Fuel Oil and Diesel Oil Regulation of 1975 (BGBl I p264; as amended in 1987, BGBl I p2671)

4th BImSchV - Regulation on Installations Subject to Permission of 1985 (BGBl I p1586; as amended in 1990, BGBl I p1080)

5th BImSchV - Pollution Control Representatives Regulation of 1975 (BGBl I pp502, 727; as amended in 1988, BGBl I p608)

6th BImSchV - Regulation on Knowledge and Reliability of Pollution Control Representatives of 1975 (BGBl I p957)

7th BImSchV - Restriction of Saw Dust Emission Regulation of 1975 (BGBl I p3133)

8th BImSchV - Lawn Mower Noise Regulation of 1987 (BGBl I p1687)

9th BImSchV - Licence Procedure Regulation of 1977 (BGBl I p274; as amended in 1988, BGBl I p608).

10th BImSchV - Ban of PCB, PCT and VC Regulation of 1989 (BGBl I p1482)

11th BImSchV - Duty to Report Emissions Regulation of 1978 (BGBl I p2027; as amended in 1985, BGBl I p1586)

12th BImSchV - Failures of Installations Regulation 1988 (BGBl I p625)

13th BImSchV - Large Combustion Plants Regulation of 1983 (BGBl I p719)

14th BImSchV - Military Installations Regulation of 1986 (BGBl I p380)

15th BImSchV - Building Machine Noise Regulation of 1986 (BGBl I p1729; as amended in 1988, BGBl I p166)

16th BImSchV - Traffic Noise Regulation of 1990 (BGBl I p1036)

BzBlG (Benzinbleigesetz) - Lead-in-Petrol Act of 1971 (BGBl p1234; as amended in 1987, BGBl I p2810)

BzV (Benzinqualitäts - Verordnung) - Quality of Petrol Regulation of 1988 (BGBl I p969)

FlugLG (Fluglärmgesetz) - Aviation Noise Act of 1971 (BGBl I p282; as amended in 1986, BGBl I p2449)

TA Lärm - Technical Directive on Noise Abatement of 1968 (Supplement to the BAnz no 137/1968)

TA Luft - Technical Directive on Air Pollution Control of 1986 (GMBl pp95, 202)

<u>South Africa</u>

Atmospheric Pollution Prevention Act 45 of 1965 (as amended in 1985)

Aviation Act 74 of 1962 (as amended in 1987) (Regulations)

Environment Conservation Act 73 of 1989

Health Act 63 of 1977 (as amended in 1983) (Regulations)

Machinery and Occupational Safety Act 6 of 1983

Mines and Works Act 27 of 1956 (as amended in 1987) (Regulations)

Provincial Road Traffic Ordinances of 1966

Freshwater and Soil Protection (against pollution)

Germany

AbfKläV (Klärschlammverordnung) - Sewage Sludge Regulation of 1982 (BGBl I p734)

AbwAG (Abwasserabgabengesetz) - Sewage Charges Act of 1987 (BGBl I p880)

AltölV (Altöl-Verordnung) - Waste Oil Regulation of 1987 (BGBl I p2335)

DMG (Düngemittelgesetz) - Fertiliser Act of 1977 (BGBl I p2134)

HKWAbfV (Verordnung über die Entsorgung gebrauchter halogenierter Lösemittel) - Disposal of Halogenous Solvents Regulation of 1989 (BGBl I p1918)

WHG (Wasserhaushaltsgesetz) - Water Resources Act of 1986 (BGBl I pp1529, 1654; as amended in 1990, BGBl I p205)

WRMG (Wasch-und Reinigungsmittelgesetz) - Detergent Act of 1987 (BGBl I p875)

South Africa

Environment Conservation Act 73 of 1989

Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act 36 of 1947 (as amended in 1980)

Lake Areas Development Act 39 of 1975 (as amended in 1986)

Soil Conservation Act 76 of 1969

Water Act 54 of 1956 (as amended in 1988)

Water Research Act 34 of 1971 (as amended in 1985)

Solid Waste Disposal and Recycling

Germany

AbfG (Abfallgesetz) - Waste Act of 1986 (BGBl I pp1410, 1501; as amended in 1990, BGBl I p870)

AbfBefV (Abfallbeförderungs-Verordnung) - Waste Carriage Regulation of 1983 (BGBl I p1130; as amended in 1988, BGBl I p2126)

AbfBestV (Abfallbestimmungs-Verordnung) - Definition of Waste Regulation of 1990 (BGBl I p614)

AbfBetrbV (Verordnung über Betriebsbeauftragte für Abfall) - Waste Disposal Representatives Regulation of 1977 (BGBl I p1913)

AbfRestUberwV (Abfall-und Restoffüberwachungs-Verordnung) - Waste Control Regulation of 1990 (BGBl I p648)

AbfVerbrV (Abfallverbringungs-Verordnung) - Regulation on Import, Export and Transit of Waste of 1988 (BGBl I pp2126, 2418)

AVwV (Anleitung über Anforderungen zum Schutz des Grundwassers bei der Lagerung und Ablagerung von Abfällen) - Directive on Protection of Underground Water on Waste Disposal Sites of 1990 (GMBl p74)

GetrVerpV (Verordnung über die Rücknahme und Pfanderhebung von Getränkeverpackungen aus Kunststoffen) - Regulation on the Duty to Accept and Charge Deposit for Plastic Bottles of 1988 (BGBl I p2455)

TA Abfall - Technical Directive on Waste Disposal of 1990 (GMBl p170)

TierKBG (Tierkörperbeseitigungsgesetz) - Animal Carcass Disposal Act of 1975 (BGBl I p2313, 2610)

South Africa

Animal Slaughter, Meat and Animal Produce Hygiene Act 87 of 1967 (as amended in 1980)

Environment Conservation Act 73 of 1989

Mines and Works Act 27 of 1956 (as amended in 1987)

Mining Rights Act 20 of 1967 (as amended in 1988)

Prevention of Environmental Pollution Ordinance (Natal) 21 of 1981.

Prohibition on Dumping of Rubbish Ordinance (OFS) 8 of 1986.

Nuclear Energy

Germany

AtG (Atomgesetz) - Nuclear Energy Act of 1985 (BGBl I p1565; as amended in 1990, BGBl I p478)

AtVfV (Atomrechtliche Verfahrensordnung) - Regulation on Licence Procedures for Nuclear Installations of 1982 (BGBl I p411)

StrVG (Strahlenschutzvorsorgegesetz) - Radiation Precautions Act of 1986 (BGBl I p2610; as amended in 1989, BGBl I p1830)

South Africa

Hazardous Substances Act 15 of 1973 (as amended in 1986)

Mining Rights Act 20 of 1967 (as amended in 1988)

Nuclear Energy Act 92 of 1982 (as amended in 1988)

Hazardous Substances

Germany

ChemG (Chemikaliengesetz) - Chemicals Act of 1990 (BGBl p521)

ChemGAltstoffV (Chemikalien-Altstoffverordnung) - Chemical Waste Regulation of 1981 (BGBL I p1239)

ChemGGefMerkmV (ChemG/Gefährlichkeitsmerkmale-Verordnung) - Regulation on Indications of Dangerous Chemicals of 1981 (BGBl I p1487)

ChemGGiftInfoV (ChemG/Giftinformationsverordnung) - Regulation on the Duty to Provide Information Regarding Poisonous Substances of 1990 (BGBl I p1424)

ChemGPrüfV (ChemG/Prüfnachweisverordnung) - Test Certificate Regulation of 1990 (BGBl I p1432)

DDT-Gesetz - DDT Act of 1972 (BGBl I p1385; as amended in 1986, BGBl I p1505)

Gefahrgutgesetz (Gesetz über die Beförderung gefährlicher Güter) - Hazardous Goods Carriage Act of 1975 (BGBl I p2121; as amended in 1990, BGBl I p1830)

GefStoffV (Gefahrstoffverordnung) - Hazardous Substances Regulation of 1986 (BGBl I p1470; as amended in 1989, BGBl I p2235)

PflSchG (Pflanzenschutzgesetz) - Plant Protection and Pesticide Act of 1986 (BGBl I p1505; as amended in 1990, BGBl I p1221)

PCP-V (Pentachlorphenolverbotsverordnung) - Ban on PCP Regulation of 1989 (BGBl I p2235)

South Africa

Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act 36 of 1947 (as amended in 1980)

Foodstuffs, Cosmetics and Disinfectants Act 54 of 1972 (as amended in 1986)

Hazardous Substances Act 15 of 1973 (as amended in 1986)

Health Act 63 of 1977 (as amended in 1983)

A. INTRODUCTION

This dissertation examines the principles, instruments and remedies of environmental law in Germany and South Africa, as far as they are relevant for the control of pollution.

The purpose is to investigate to what extent and in what respect the two countries can learn from each other. German pollution control law has gone through a tremendous development in the course of the last decade and might now be amongst the most developed in the world. In South Africa, too, the environment has become an important topic[1], new legislation has been passed and further legislation is envisaged to improve its protection.

The German experience is that the efficiency of pollution control law depends largely on general procedures and principles, like public participation and judicial review which are important for the success of other fields of environmental protection too. Therefore it is appropriate to examine these general rules without leaving the specific problems of pollution control unconsidered.

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1 See E Koch 'Green politics straddles class divides' The Weekly Mail 16 Dec 1990 p16

German law is becoming more and more influenced by the legislation of the European Community (EC). However, the EC has until now been far more interested in economic issues and only a few directives on environmental law have been passed so far (*eg* the Directive on Environmental Impact Assessment).

B. INTENTION OF ENVIRONMENTAL LAW IN GENERAL AND POLLUTION-CONTROL LEGISLATION IN PARTICULAR

I ENVIRONMENTAL LAW

The problem of defining the concept `environment´ and stating the purpose of `environmental law´ has been widely discussed in Germany as well as South Africa. But unlike the German situation, where agreement has been reached, the subject is still controversial in South Africa.[2]

The Environmental Conservation Act 79 of 1989 states the potential purposes of environmental policy *inter alia* as follows:

> `the protection of ecological processes, natural systems and the natural beauty, as well as the preservation of biotic diversity in the natural environment; ...
> the protection of the environment against disturbance, deterioration, defacement, poisoning or destruction as a result of man-made structures, installations, processes or products or human activities...´[3]

The Act defines `environment´ as:

> `the aggregate of surrounding objects, conditions and influences that influence the life and habits of man or any other organism or collection of organisms´.[4]

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2 See DV Cowen `Toward distinctive principles of South African environmental law: some jurisprudential perspectives and a role for legislation´ 1989 THRHR 6ff.

3 s2(1)(a) and (c).

4 s1(x).

Some authors prefer a more restricted meaning of the concept `environment´, which includes `only the interrelations between man and his *natural* environment´[5]. His description of the scope of environmental law could be called the `subject-matter-approach´.[6]

> `Environmental law encompasses all legal rules aimed at the conservation of the earth´s natural resources and the control of environmental pollution´. The purpose of environmental law is to `secur[e] an adequate environment for man and [to] conserv[e] natural resources´.[7]

The White Paper of the German Federal Government of 1971[8] describes the goals of environmental law as

> 1) to secure an environment conducive to health and welfare of man;
> 2) to protect soil, water and air as well as flora and fauna against harmful human interference;
> 3) to redress as far as possible environmental damage caused by human interference.

Apart from the fact that the first section is solely focussed on human beings, the definition has reached a broad consensus in Germany.[9] It is called `trinity of

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5 MA Rabie `A new deal for environmental conservation: aspects of the Environment Conservation Act 73 of 1989´ (1990) THRHR 3ff.
6 See DV Cowen (n2) 7.
7 RF Fuggle & MA Rabie (eds) `Environmental Concerns in South Africa´ (1983) p32.
8 `Umweltprogramm´, BT-Dr VI /2710 p6.
9 *Cf* R Schmidt `Einführung in das Umweltrecht´ (2nd ed. 1989) p6f; J Salzwedel (ed) `Grundzüge des Umweltrechts´ (1982) p86ff; FL Blechschmidt `The Control of Pollution of Inland Waters - A Necessary

environmental goals'.[10] A 'tangible' definition of the scope of environmental law seems, indeed, to be preferable in order to support the development of environmental law as a separate and distinct branch of law.[11]

Accordingly, a narrow definition of the concept 'environment' is prevailing in Germany.[12] s1 (1) para 15 ChemGGefMerkmV (Regulation on Indications of Dangerous Chemicals), for instance, defines environment as

> 'water, air and soil as well as the interaction between these resources and all creatures'

Somewhat wider is the definition in s1 para1 BWaldG (Federal Forest Act), where 'environment' is paraphrased by

> 'constant efficiency of the biosphere, climate, water resources, purity of the air, fertility of the soil, landscape, infrastructure and recreation of the population'

However, it must be realised that the controversy of the concept 'environment' has little consequence for the efficacy of environmental protection; it is an argument about a pseudo problem. It stands to reason that human

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Impulse for the British Approach?' EPL 19/1 (1989) 18f.

10 *Cf* Blechschmidt (n9) p19.

11 M Kloepfer 'Umweltrecht' (1989) p11f; Rabie (n5).

12 See Kloepfer (n11)

well-being will always form the centre of every legal system and that the environment can only be protected effectively where man has comprehended that his own interests are at stake.[13]

II POLLUTION-CONTROL LAW

The meaning of the word `pollution´ and thus the concept and scope of pollution control law is just as controversial.[14] `Pollution´ can be used in two distinct senses: either to indicate any alteration of a given environment or to describe a particular level or class of environmental change that is regarded to be legally significant.

The approach that pollution is any alteration of the environment is not very useful because it allows little (or rather no) room for man in the natural world.[15] Acceptance of a certain degree of alteration requires on the other hand the formulation of threshold limits, which raises scientific questions. Three fundamentally different approaches have been put forward to circumscribe the necessary degree of degradation:

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13 *Ibid*
14 See AL Springer `The International Law of Pollution´ (1983) p63 ff.
15 See Kloepfer (n11) p13; Springer (n14) p66.

Pollution could be described as `interference with other uses of the environment´. If this approach regards only man as a user of the environment, but not flora and fauna, it narrows the scope of pollution control considerably. The disregard for the environment as a value in itself is a major objection against it.[16]

A second major approach is the postulate that pollution means `over-loading the natural cycles´[17] or `exceeding the assimilative capacity of the environment´.[18] The advantage of this approach is that it takes the sensitivity of the biosphere into account. It is, however, difficult - in many cases even impossible - to foresee the effect of specific substances or actions on the environment. In addition, this definition does not take into account the accumulation of pollution[19] and does not secure a `safety margin´ for future pollution.[20]

A common definition for pollution is `damage to the environment´. The major shortcoming of this approach is

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16 Springer (n14) p75.
17 US Senate, Committee on Commerce, Subcommittee on Oceans and Atmosphere, International Conference on Ocean Pollution, statement by Barry Commoner, 92nd Cong., 2nd sess., 18 Oct. and 8 Nov. 1971, p77.
18 Springer (n14) p76.
19 For instance the acid-rain problem.
20 See Chapter CI *infra*.

the uncertainty of how serious the effect on the environment has to be in order to justify the classification as `damage´.[21]

For the purpose of this thesis, a combination of the last two approaches shall be taken as a basis, which includes preventative aspects:

> *The goal of pollution control law is the protection of mankind, natural ecosystem and natural resources against harmful or potentially harmful human interference.*

The fundamental question, however, remains the matter of standards.[22]

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21 See Springer (n14) p68ff.

22 CB Bourne, comment in `The Trail Smelter Arbitration: Oral proceedings´, Oregan Law Review 50 (1971) p295; see too P Fischer ´Umweltschutz durch technische Regelungen´ (1989) p17.

C. PRINCIPLES OF ENVIRONMENTAL LAW

In German environmental Law there is not only a `trinity of goals´ but also a ´trinity of principles´,[23] which were pronounced by the German Federal Government in 1976.[24] The principles of `prevention´ and `co-operation´ are apparently specific to German law, while the `polluter-pays principle´ is well known in the Anglo-American and other legal systems.

I PRINCIPLE OF PREVENTION

In Germany, the principle of prevention or precautionary principle (´Vorsorgegrundsatz´) is considered to be the essential and basic concept of environmental law and environmental policy.[25] The idea behind this principle is that man should emit the least possible quantity of pollutants, even if their detrimental effect is uncertain.[26] The reason for such a strict approach is, on the one hand, the conviction that no emission is without negative effects on man and the environment;

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23 *Cf* I v Münch (ed) `Besonderes Verwaltungsrecht´ (8th ed 1988) p60ff; R Schmidt `Einführung in das Umweltrecht´ (2nd ed 1989) p7ff; FL Blechschmidt (n8) p18f.

24 ´Umweltbericht 1976´, BT-Dr 7/5684 p6ff

25 See M KLoepfer ´Umweltrecht´ (1989) p74; P C Storm `Umweltrecht´ (1980) p17.

26 M Kloepfer ´Umweltrecht´ (1989) p79.

moreover, the danger of many substances has not been determined to date.[27]

The `greenhouse effect´, caused by *inter alia* carbon dioxide emissions provides a good example for such a misinterpretation. Only a couple of years ago many scientists regarded carbon dioxide as relatively harmless because it is a natural compound in the atmosphere. For this reason the catalytic converter was considered as the ideal solution for pollution by motor cars; it converts hydrocarbons, nitrogen oxide and carbon monoxide almost completely into water vapour, nitrogen and carbon dioxide.[28] The catalytic converter is, however, not able to reduce carbon dioxide emissions[28]. According to the current state of knowledge, the `greenhouse effect´[30] can only be reduced by saving energy; thus enormous efforts are again necessary.[31] Many technologists now even believe that improved (*ie* `cleaner´) diesel engines are preferable to (petrol engines with) dual-bed catalytic

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27 *Cf* Schmidt (n23).
28 See Umweltbundesamt 'Jahresbericht 1989´ p126ff; see, too, OECD 'Transport and the Environment´ (1988) p127.
29 Umweltbundeamt (n28) p128.
30 See IAW Macdonald 'Global environment - is there any good news´ UCT News Magazine vol 16 no 2 p20ff. See also J Yeld 'UCT scientist slams SASOL chief's CO_2 claims´ The Argus 17 Sept 1990.
31 OECD (n28)

converters, because they consume considerably less fuel and emit therefore less carbon dioxide.[32]

Another reason for the principle of prevention is to secure a `spare´ or `safety margin´ for future pollution.[33] German legislation does not explicitly include a `prinicple of prevention´, but the principle is evident in several German acts outlined below:

s1 BImSchG (Federal Imission Control Act):
´The goal of this act is to protect human beings as well as animals, plants and other objects against harmful interference in the environment ... and *to take precautions against potentially harmful influences on the environment´*.

s5 (1) para 2 BImSchG prescribes precautionary measures against detrimental interference in the environment for installations, particularly through the implementation *the best control technology currently available´*

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32 For a comparison between the emissions of spark ignition engines equipped with catalytic converters and diesel engines see Umweltbundesamt (n28) p132f

33 See Kloepfer (n26) p77. *Cf* Council for the Environment `An Approach to a National Environmental Policy and Strategy for South Africa´ (1989) p8f.

s1a WHG (Water Resources Act) prescribes that any unnecessary action detrimental to the quality of water must cease. Everybody is obliged to prevent pollution and to save water. In accordance with s3 WHG a licence is necessary for using and draining of water, for discharging into water and for exposing ground water.

s7a WHG determines that a licence for discharging sewage may only be granted, if the content of harmful substances ("Schadstofffracht") is *as low as possible ... according to the generally recognized state of technological advance.*

s7 (3) AtG (Nuclear Energy Act) prescribes all precautions against harm caused by the erection or operation of the installation *according to the state of scientific and technological advance.*

Any avoidable deterioration in nature and landscape is forbidden by s8 BNatSchG (Federal Nature Conservation Act) and demands compensation in kind is prescribed by measures of nature conservation and landscape protection for inevitable actions.

Although these directives are not specific and therefore subject to interpretation, they have proved to be very effective, in particular the requirement of the best pollution control technology available (s5 (1) para 2 BImSchG, s7a WHG, s7 (3) AtG).[34] The Federal Minister for the Environment has used the delegated power to issue regulations and has implemented strict pollution control standards.[35] Rigorous legislation has caused a steady decrease in the emission of mass pollutants. Between 1970 and 1986 carbon monoxide (CO) emissions in (West) Germany dropped by 37%, sulphur dioxide (SO_2) emissions by 58% and dust emissions by 64%, in spite of an immense economic growth;[36] only the emission of nitrogen oxides (NO_x) increased by 26% during the same period, but a reduction of 38% has been initiated through new legislation.[37]

In South Africa, the Atmospheric Pollution Prevention Act (45 of 1965) prescribes the 'best practicable means' for the reduction of noxious or offensive gases (s10(2)(a)(i)) and dust in dust control areas (s28(1),

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34 See J Salzwedel in : F Nicklisch (ed) 'Prävention im Umweltrecht. Risikovorsorge, Grenzwerte , Haftung' (1988) p13ff.

35 The most important regulations are the Furnaces Regulation (1st BImSchV) and the Regulation on Large Combustion Plants (13th BImSchV).

36 Federal Minister for the Environment (n29) p11

37 *Ibid*

(2)). These provisions would allow strict pollution control. The formulation seems to indicate preventive intentions, since no actual hazard is to be feared. Unfortunately, the inclusion of `the cost likely to be involved´ as a factor of consideration (see the definition in s1) has led to a far-reaching inefficiency of the Act[38]; the economic factors are normally considered to outweigh the impact of the pollutant.[39] This point of view, however, overlooks the long term effects of pollution, which are often unpredictable and can be disastrous.[40]

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38 See JI Glazewski `The Law´s Response to Environmental Challenges´ Earthyear 90 p23f; J Clarke `The Fate of the Nation´ Sunday Star Magazine 22 April 1990 p39ff, 44. See also MA Rabie `Legal remedies for environmental protection´ 1972 CILSA 278ff; RF Fuggle & MA Rabie `Environmental Concerns in South Africa´ (1983) p289ff.

39 For an extreme example see B Huntley, R Siegfried & C Sunter `South African Environments into the 21st Century´ (1989) p67: They regard measures of desulphurization of power stations as not advisable at present, because the `investments will have to be weighed against the environmental benefits. Hence, atmospheric pollution may well worsen until new, economically acceptable technologies are developed to control it´. They do not consider the vast devastation in parts of the Eastern Transvaal, which will be caused by the highest sulphur dioxide levels in the world on the long term. The damages will outweigh the costs for desulphurization by far.

40 See PD Tyson, FG Kruger & CW Louw `Atmospheric pollution and its implications in the Eastern Transvaal Highveld´ SA National Scientific Programmes Report n115 (1988) p98: `Once damaged on a systematic and large scale, the environment will take a long time to recover. This fact should never be forgotten´. The acid rain and the death of the

Under German law the universal constitutional principle of proportionality (`Verhältnismässigkeitsprinzip´) is the only limit for pollution control requirements, which includes a ban on excessive actions (`Übermassverbot´).[41] This means in practice that a polluter cannot be forced to take pollution control measures, if the high cost and the low positive effect for the environment are out of all proportion. The cost factor alone, however, does not make an administrative act disproportionate.

II POLLUTER-PAYS PRINCIPLE

The polluter pays principle is the clearest and most tangible principle of environmental and particularly pollution control law. The principle means that a polluter must compensate for the damages caused by emissions. It can also mean that charges have to be paid for emissions, irrespective of provable damages.

It is believed that the main reason for the high degree of environmental damage is the fact that natural resources, such as air, soil and water can in most cases

forests of the Northern Hemisphere should be an awful example.

41 See BVerfG (Federal Constitutional Court) E 23, 127 (133); 35, 382 (400); K Stern `Das Staatsrecht der Bundesrepublik Deutchland´ vol 1 (1977) p114, 671f.

still be used and polluted free of charge. In many cases the expenses have still to be met by the community as a whole, and not by producers or consumers (so-called external diseconomy).[42] It is generally acknowledged that the consequences of pollution should be passed onto the polluter (`internalised´).[43]

It can, of course, be difficult to locate the polluter. As far as diffuse pollution is concerned (*eg* the acid rain problem), all emitters of certain substances (*eg* sulphur dioxide) are jointly responsible for the damage. To pick out a certain group of polluters is, however, not incompatible with the polluter-pays principle.[44] It will often be sensible to fight pollution where the greatest success can be achieved with the least effort. In the case of acid rain for instance, it is advisable to fight emissions of (the relatively few) large installations

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42 See MA Rabie `Legal remedies for environmental protection´ (1972) CILSA 250ff. See also Schmidt (n23) p5.

43 KH Hansmeyer `Polluter Pays´ v `Public Responsibility´ EPL 6/1980 p23f. No regard should be paid to M Adams sarcastic attack on the polluter pays principle (`Das "Verursacherprinzip" als Leerformel´ JZ 1989, 787ff). He goes so far as to say that people drinking polluted water were just as much originators of environmental damage as factories discharging into water; people injured by pesticides as much as farmers spraying the substance.

44 Hansmeyer (n43) p24; Schmidt (n23) p9.

first[45]. In some cases, however, the emission control of small emitters is simple, too, *eg* by reducing the sulphur content of fuel oil.[46]

As far as harmful products are concerned, both producer and consumers are responsible for the environmental impact. Usually it will, however, be preferable and fair to charge the producer, because he is in a much better position to asses the effects of his product on the environment.[47]

The polluter pays-principle does not only mean compensation for damages. To achieve a preventative effect, the importance of environmental taxes and charges is now highly emphasised in Germany.[48] The idea is that the rate of taxation should be proportional to the extent of emission. If the environmental taxes are correctly calculated, it will be cheaper to equip installations with modern emission control techniques than to pay high charges. The advantage of environmental taxes over a simple determination of pollution limits is that the

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45 *Cf* in Germany the 13th BImSchV (Regulation on Large Combustion Plants), which has introduced extremely strict pollution standards.
46 *Cf* in Germany the 3rd BImSchV (Regulation on the Sulphur Content of Light Fuel Oil and Diesel Oil).
47 In this respect even Adams (n43) agrees, see p789.
48 *Cf* Schmidt (n23) p18f.

polluter can decide from an economic point of view which kind of pollution control measures he is going to introduce. He can bring pollution control equipment into action where it is most cost-effective. The main advantage of environmental charges, however, is the pecuniary pressure to *develop* less polluting production methods and less harmful products; such financial inducement is of enormous value in a free economy.[49]

To date, one of the few environmental charges in Germany is the sewage charge (`Abwasserabgabe´). In addition to the requirement of a permit which will only be granted, if all possible measures to reduce pollution are taken (ss3, 7a WHG - Water Resources Act), a sewage charge has to be paid for the inevitable residual sewage.[50] The system of discharge fees has already proved effective.[51]

In South Africa economic incentives have not yet been employed in the control of pollution on a national level. Some municipalities, however, have introduced effluent charges.

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49 See Rabie (n42) The different approach in the United States, where a reduction of fuel consumption of motor cars was prescribed by law, was not particularly successful.

50 ss1, 9(1) AbwAG (Sewage Charges Act).

51 *Cf* See Rabie (n42) p253.

Details of civil liability and environmental charges will be discussed in chapter D III and IV *infra*.

III PRINCIPLE OF CO-OPERATION

German jurists emphasise the principle of co-operation as a procedural rule. Collaboration between State and all parties concerned should improve the protection of the environment.[52]

This principle is more or less only an expression of a well-known fact that measures can be easier and more effectively implemented in harmony with the people affected than in opposition to them[53]. There is, however, the risk of accepting unsatisfactory compromises in order to reach harmony. Legislation cannot be rendered superfluous by means of co-operation, even though contracts under public law ('öffentlich-rechtliche Verträge') might be implemented instead of administrative orders in Germany.[54]

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52 RB Macrory, Z Madar & KC Onz 'Air Purification Policy' EPL 17/5 (1987) 197. Storm (n25) p17f.

53 *Cf* Schmidt (n23) p10.

54 The 'öffentlich-rechtlicher Vertrag' is a contract between the government or an administrative body and individuals or private corporations replacing administrative compulsion. In case of breach of such a control, administrative courts have jurisdiction.

In a few cases the German Federal Government has made informal agreements with industrial associations to carry out pollution reduction.[55] This has been criticised, because there are no constraints in cases of non-compliance with such an `understanding´.[56] The industrial associations have, in fact, not always observed informal agreements.[57]

The principle of co-operation has been embodied in many German acts as far as participation of the public or the people affected is concerned. Details of public participation will be treated in chapter D I *infra*.

Another result of the principle of co-operation is that representatives for pollution control, waste disposal and radiation protection are to be appointed by private companies for certain kinds of installations.[58] The

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55 `Understanding´ to secure the sales quote of reusable bottles and `understanding´ about elimination of chlorofluorocarbons (CFCs) as aerosol propellants, see Umweltbundesamt (n28) p100; g Hartkopf & E Bohne ´Umweltpolitik´ vol 1 (1983) p245f.

56 Macroy, Madar & Onz (n52); Schmidt (n23) p10.

57 The sales quota of reusable bottles has dropped below the fixed minimum level; see `Der Spiegel´ 1985 no 6 p72f. On the other hand, has the 90% reduction of CFCs been reached in far less than the negotiated period. Reason was, however, not the agreement but a consumer´s boycott of sprays containing the substance.

58 See 5th BImSchV (Regulation on Pollution Control Representatives); AbfBetrbV (Regulation on Waste

intention is that members of the staff should represent the idea of pollution control in the company.[58] Their task is to show the management the environmental impact of actions at an early stage.[60] In addition, representatives, who are supposed to be experts in their field, can improve communication and collaboration between the civil authority and the company concerned.[61]

IV CONCLUSIONS

The import of principles, whether legislative or administrative, should not be overestimated. Principles can only cause indirect results by guiding or forcing the legislature and the executive to perform certain environmentally desirable actions.

The principle of prevention, formulated by the Federal Government in 1976,[62] has been an important step towards an environmental policy and law which looks ahead and is

Disposal Representatives); ss21a - g WHG; s29 (2) - s31 StrVG.

59 M Frankel 'Cleaning up' Newsweek 19 Nov 1990 p42

60 For that reason the principle of prevention is concerned, too.

61 The effects of the regulations on representatives are limited because they do not state rights and duties of the representatives, withthe exception of the representatives for radiation protection (s30 (1) 3 StrVG), see Kloepfer (n26) p93.

62 'Umweltbericht 1976' (n24)

not only concerned with eliminating the effects of past neglect.[63] In South Africa, recognition of a precautionary principle could bring about considerable progress. In this country environmental decision-making is to often based on a simple comparison between the presumable environmental damage and the investment necessary to avoid the damages.[64] Such an approach is necessarily short-sighted and unable to prevent future environmental degradation.

It is a fact that South Africa as a country with a large third-world component has enormous problems apart from environmental concerns, *eg* providing food, education, medical care and employment for its rapidly increasing population.[65] Its financial resources are not sufficient, to solve all problems at once, not least due to sanctions and disinvestment. The international community which has caused severe economic damage should now be prepared to share the burden of reconstruction.

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63 *Cf* Kloepfer (n26) p75ff
64 See for example Huntley, Siegfried & Sunter (n39)
65 For the specific problems of environmental protection in developing countries see Kloepfer (n26) p377 ff

The benefits of the polluter-pays principle have been recognised in South Africa for a long time.[66] It is of tremendous importance to implement structures for a just distribution of the financial burden of cleaning-up measures.[67]

No considerable significance can be found in the principle of co-operation. Aiming at a genuine collaboration between the State and polluters unrealistic. Emitters should as a matter of course have the opportunity to be heard before a decision concerning their activities is made.[68] The State must, however, retain the power to take action whenever necessary.[69]

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66 See MA Rabie 'Legal Remedies for Environmental Protection' 1972 CILSA 250f
67 See *infra* n433 ff
68 See *infra* n109 ff
69 Kloepfer (n26) p92

D. POLLUTION-CONTOL REMEDIES

I ADMINISTRATIVE LAW[70]

Administrative actions are the `classic´ measures of pollution control.[71] Pollution control legislation in Germany as well as South Africa falls almost completely into the field of administrative law.[72] There is, however, the trend in Germany to get away from pollution standards and to replace them with pollution or environmental charges[73]; but prohibition will undoubtedly never be totally unnecessary as far as certain hazardous activities are concerned.

1. Pollution control procedures

a) Germany

Five different pollution control procedures have been developed in Germany.[74]

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70 In accordance with `Jowitt´s Dictionary of English Law´ (1977) and `Black´s Law Dictionary´ (5th ed 1979), administrative law includes regulations issued and acts and regulations enforced by the executive. This usage is wider than the one in RF Fuggle & MA Rabie´s `Environmental Concerns in South Africa´ (1983) p47, where only the control of decisions and actions of the executive were included.

71 See Chapter B *supra*.

72 See Fuggle & Rabie (n70) p35; Storm `Umweltrecht´ (1980) p41.

73 See Chapter D IV and CII *infra*.

74 See Schmidt (n23) pp11ff.

(1) The simplest pollution control procedure is a mere administrative power of intervention in case of non-observance of pollution standards. This procedure is usually applicable to less hazardous actions. The BImSchG (Federal Immission Control Act) provides the administrative power to implement special obligations or to ban certain activities, if an installations fails to comply with regulations - irrespective of permission requirements.[75]

The shortcoming of such a procedure is that the control board can often not intervene before damage has occurred. It is therefore actually incompatible with the principle of prevention.[76]

(2) A more interventionist procedure is the duty to report certain actions to a control board. The executive shall be enabled by such a notice to examine the environmental impact of the activity at an early stage and to act if necessary.

Registration is the basic requirement concerning marketing of chemicals.[77] Every producer or importer of

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75 See ss24, 25 BImSchG.
76 Chapter CI *supra*.
77 See s4 ChemG (Chemicals Act).

chemical substances[78] has to not later than 45 days before marketing starts to inform a control authority[79] about the compound, intended usage, hazardous effects, quantity, processes for disposal and neutralising[80] and - as far as hazardous substances[81] are concerned - recommendations of precautionary and emergency measures, packing and declaration (labeling).[82] For this purpose the producer or importer is obliged to test all chemicals on properties, toxicity and environmental impact.[83]

This procedure has been criticised because the tests are carried out by producers (or importers) themselves.[84] However, it has to be considered that in an industrialised economy, as many new chemicals per year are marketed, that examinations by a control board are virtually impossible from an administrative point of

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78 With the exception of food, medicine (ArznG-Medicaments Act) and Waste (AbfG - Waste Act).
79 'Bundesanstalt für Arbeitsschutz und Unfall-forschung' (see regulation of 1981 - BGBl I p2089, as amended in 1986 - BGBl I p2089).
80 See s6 1 ChemG.
81 See definition in s3 para 3 ChemG.
82 s 6 (2) ChemG.
83 See s7 ChemG. Exceptions apply to chemicals which quantity per year is below 1.000kg (ss 7 (1), 5 (1) para 2 ChemG). Particularly strict tests are compulsory for substances of which more than 100.000 kg per year are marketed (s9 ChemG).
84 Schmidt-Heck in: F Nicklisch (ed) 'Prävention im Umweltrecht' (1988) p29ff.

view.[85] To introduce the requirement that tests be carried out by administrative bodies or independent authorities would bring the development of chemicals almost to a standstill.

(3) For many activities permits are required. This is obviously a more efficient way of controlling critical actions because the authority can examine the impact on the environment (and *eg* on public health) *before* damage occurs.[86]

The 4th BImSchV[87] enumerates installations subject to permit requirements as far as air pollution, noise and vibration are concerned. As a rule, permission is required for all installations apart from minor ones. For example, power stations for solid fuel with an output of more than 1MW and slaughter-houses with a capacity of more than 4000 kg per week[88] are subject to permit requirements.

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85 The `Bundesgesundheitsamt´ (Federal Health Office) which is testing all new pharmaceutics has, in fact, severe difficulties in coping with the enormous output of the German pharmaceutical industry - in spite of a high testing capacity.

86 *Cf* R Schmidt `Einführung in das Umweltrecht´ (2nd ed 1989) p14.

87 Regulation on Installations Subject to Permission.

88 In addition a building licence is necessary for all buildings.

The PflSchG (Plant Protection and Pesticide Act) prescribes for all pesticides that a permit be issued by the `Biologische Bundesanstalt´ (Federal Biological Institute)[89] , for which consent with the `Umweltbundesamt´ (Federal Environmental Agency) is required.[90] Permits are also required for disposal sites[91] and for collecting waste on a commercial basis.[92]

All vehicles must go on an annual emission check-up to receive the required emission test certificate (`Abgassonderuntersuchung´), which is, in fact, a permit to operate the vehicle.

If the planned activity complies with the legal requirements, the applicant is entitled to a permit in the above-mentioned cases. The authorising body cannot exercise discretion in these cases.[93]

(4) The strictest form of environmental control is a system of discretionary permits. This procedure is only applicable in exceptional cases. The authority can refuse a permit, even if an installation complies with

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89 See s11 (1) PflSchG.
90 See s15 (2) para 2 PflSchG.
91 See s4 AbfG (Waste Act).
92 See s 12 AbfG.
93 See BVerwG (Federal Administrative Supreme Court) E55 p253f.

all prescriptions. If all legal requirements are met, the granting of the permit is still left to the 'dutiful' discretion ('pflichtgemässes Ermessen') of the authorising body. However, the administrative courts can review the administrative decision for abuse of discretion ('Ermessensfehler').

Major examples are the WHG (Water Resources Act)[94] and the AtG (Nuclear Energy Act)[95]. Permission to discharge into water or to operate nuclear installations cannot be granted to an unlimited number of applicants, because of the major importance of water resources[96] and the gravity of danger in nuclear energy respectively.[97]

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94 See ss2,7,8 WHG.

95 See ss7,9 AtG.

96 The reason for this is German constitutional law. Property is guaranteed by Article 14 (1) GG (German Constitution). This includes - in general terms - the owner's right to use his property at his pleasure, as long as the usage is not incompatible to the law; the guarantee of property includes industrial and commercial enterprise. As a result activities can only be prevented (*ie* a permit can only be refused) if the activity does not adhere to the legislation (*eg* the pollution standards); otherwise a permit has to be issued. See HJ Papier in T Maunz, G Dürig, R Herzog & R Scholz 'Grundgesetz Kommentar; (1986) Article 14 para 91ff.

97 For this reason, certain kinds of water usage have been eliminated from the guaranteed 'property' (n75) by the WHG, s BVerfG (Federal Constitutional Court) E58 p344; critical to this HJ Papier (n75) para 82f. 371a.

b) South Africa

Similar measures to the German pollution control legislation are used in South Africa. A typical procedure is the administrative power of intervention by means of issuing an `abatement notice´ in case of non-compliance with legal demands.[98] As far as air pollution through noxious gases is concerned, a permit (`registration certificate´) is required in most cases.[99] Other activities subject to permission are certain kinds of water usage[100], establishing, providing and operating of disposal sites[101], production and import of pesticides[102], the sale of `Group I Hazardous

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98 See ss19, 29 and 37(2) of the Atmospheric Pollution Prevention Act 45 of 1965 (Smoke, dust and vehicles); s23A Water Act 57 of 1956 (water pollution through farming operations); s23(3) Machinery and Occupational Safety Act 6 of 1983 (noise).

99 Sect. 9 Atmospheric Pollution Prevention Act 45 of 1965. See, too, s15(1)(b), (2) for smoke control of certain large furnaces (`written notice of approval´). Even if the Act is potent on paper, it has proved to be quite ineffective in practice, see J I Glazewski `The Law´s Response to Environmental Challenges´ Earthyear 90 p23.

100 See s5(1) (Selling or disposal of water for use on other land) and s12 (use of water for industrial purposes) of the Water Act 57 of 1956. Because the industry is finding it economically burdensome to clean up its effluent, the tendency for the government is to lower standards, see J Clarke `The Fate of the Nation´ Sunday Star Magazine 22 April 1990 p40.

101 See s20(1) Environment Conservation Act 73 of 1989.

102 See s3 and 16 Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act 36 of 1947.

Substances´[103] and for construction and operating of nuclear installations.[104]

A major difference between German and South African legislation is that the issue of permits and licences in South Africa is always left to administrative discretion[105], while the administrative body in Germany has discretionary power only in exceptional cases;[106] it only ensures that the activity in question complies with the legal requirements. As far as legal terms or requirements are concerned, which need concretisation (*eg* `all possible means´), guidelines have often been introduced (*eg* TA Luft - Technical Directive on Air Pollution Control), to guarantee uniform application by the multiple administrative bodies.[107]

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103 See s3(1)(a), 2(1) Hazardous Substances Act 15 of 1973.

104 See s30 Nuclear Energy Act 92 of 1982.

105 See for instance s10(4), (3) Atmospheric Pollution Prevention Act 45 of 1965. The chief officer must be `satisfied that the scheduled process may reasonably be permitted to be carried on having regard to ... any ... considerations which in his opinion have a bearing on the matter´. See, too, s3(2) Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act 36 of 1947.

106 See for instance s6 BImSchG: `The permit has to be granted if it is certain that the regulatory duties ... are obeyed and other public-law provisions ... are not infringed´. See, too, chapter D II c *supra*.

107 See Schmidt (n86) p49f - for details of the administrative structure see Kloepfer ´Umweltrecht´ (1989) p66ff.

In some cases informing the administrative body about certain activities is prescribed, without the requirement of a permit.[108]

c) Conclusions

The discretionary power of the executive in South Africa seems, in fact to be a crucial shortcoming. The executive, especially on local level, tends to prefer economic aspects to environmental concerns. It is advisable that all material decisions are to be made by the legislature and included in the parliamentary act. Under German law it is a constitutional principle that fundamental questions may not be decided by the executive ('Wesentlichkeitstheorie').

2. Public Participation

a) Germany

In Germany, great emphasis is being placed on participation of the people affected and the public in general in planning and licensing procedures.[109] Public participation is relevant for all aspects of environmental law (*eg* nature conservation), but it is

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108 See s12(c) Water Act 54 of 1956 (Information about use of underground water in certain areas). *Cf* chapter D I 1b *supra*.

109 *Cf* E Rehbinder & R Stewart 'Environmental Protection Policy' vol 2 (1985) p150ff.

particularly important in the field of pollution control, because most licensing procedures provide individuals with the opportunity to be heard. No project, materially effecting the environment, can be carried out any more without public participation. Public participation puts the principle of co-operation into concrete form.[110] In addition, the opportunity of being heard (`rechliches Gehör´, *audi alteram partem*) is regarded to be a fundamental principle of the rule of law (`Rechtsstaatlichkeit´)[111] and one of the most important principles of justice.[112] Even if the right to be heard was primarily developed for judicial proceedings, it is also relevant to administrative decision making. Here too, the individual should be entitled to raise objections concerning a prospective executive measure that affects or may affect his rights or (legitimate) interests. Judicial protection against executive power may be regarded as supplementary to the right to be heard: it enables the individual to appeal to an independent body for review of all activities of the administration which affect his rights or interests.

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110 See PC Storm `Umweltrecht´ (1980) p17f.
111 See L Gündling `Public Participation in Environmental Decision-Making´ in: `Trends in Environmental Policy and Law´ (1980) p133.
112 See RF Fuggle & MA Rabie `Environmental concerns in South Africa´ (1983) p53.

Increasingly, natural resources such as air, water, soil, flora and fauna are regarded as common property; their protection is not only in the interest of individuals but the community as a whole.[113] As a result, the view has emerged that the public, in whose interests environmental protection measures are taken, should be given a chance to lodge its opinion.[114]
s10 BImSchG (Federal Imissions Control Act) is the most important statutory rule concerning public participation. It is applicable for all installations enumerated in column 1 of the 4th BImSchV (Regulation on Installations Subject to Permission).[115]

The first step is the promulgation of the plans in the official gazette as well as in common local newspapers. The detailed draft plans are to be made available for inspection for two months. In this period objections to the project can be raised by *anybody* (s10(3) BImSchG).[116]

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113 *Cf* DV Cowen `Toward distinctive principles of South African environmental law: some jurisprudential perspectives and a role for legislation´ 1989 (52) THRHR 9.
114 See Gründling (n111).
115 More than 100 scheduled processes have been listed in column 1 so far, more than 90 in column 2; for the latter ones a simplified licence procedure is applicable.
116 Not only the parties concerned, because participation helps providing information for the administrative body and is therefore in the public interest, see BVerwG (Federal Administrative Supreme Court) E 28p133.

After the deadline the authorising body has to discuss the objections with the applicant and the people who lodged objections (s10(6) BImSchG). Thereafter the authorising body is to issue a record of decision (`Genehmigungsbescheid´) to state the reasons for the decision; the notice has to delivered to all parties concerned, *ie* all persons who have lodged a complaint or comment (s10 (7) BImSchG).[117]

Less formal is the public participation in the WHG (Water Resources Act). s9 WHG prescribes that no irrevocable permit for water usage (`Bewilligung´) may be granted without hearing all parties concerned. According to s7 AbfG (Waste Act) a formal project-determination procedure (`Planfeststellungsverfahren´) is obligatory which includes public participation.[118]

The strictest and most formalised public participation procedure is contained in the AtG (Nuclear Energy Act) and the AtVfV (Regulation on Licence Procedures for Nuclear Installations). In addition to the requirements stated by the BImSchG, an oral proceeding, for instance, is compulsory (s8 AtVfV). The public hearing is

117 If more than 300 parties are concerned, the record of decision can be announced publicly (s10(8) BImSchG).
118 See ss72-78 VwVfG (Administrative Proceedings Act).

organised like a trial (s12 AtVfV). Strict provisions have been made for the promulgation of the draft plans (ss5, 2(2) AtVfV) and the written record of proceedings (s13 AtVfV).

Further cases of public participation are provided for in s10 LuftVG (Luftverkehrsgesetz - Aviation Act), s18 BFStrG (Bundesfernstrassengesetz - Federal Roads Act) and s2a BauGB (Baugesetzbuch - Building Law Act).

s10 (6) BImSchG and ss8 ff AtVfV provide that the objections are to be discussed with the complainant. According to s16 (1) para 5 AtVfV, the authorising body must substantiate the assessment of the objection. s10 (7) BImSchG as well provides that the authority must give reasons for its decision. This enables the courts to review whether the objections have been taken into account in the decision-making process.

The BNatSchG (Federal Nature Conservation Act) has a strong influence on pollution control by regulating all interference with nature and landscape (s8 BNatSchG), *eg* through erection of an installation.

s29 BNatSchG (Federal Nature Conservation Act) provides officially acknowledged societies concerned with nature conservation and landscape protection with the opportunity to take part in administrative decision-making. The State has to acknowledge a society under certain conditions, *eg* it is a *bona fide* nature conservation society which is permanently working (s29 (2) para 1 BNatSchG)[118], has an area of operation covering at least one constitutional state (`Land´) (para 2) and everybody may join the society (para 5).

Public participation is not only in the interest of the aggrieved citizen, but in the interest of the administration and the applicant, too. As far as the first is concerned, public participation helps to provide information to the administration[120]. The administration will be confronted with problems and consequences resulting from the intended activity. Private citizens and citizen´s groups are often more knowledgeable about development sites and potential environmental impacts to them than the planners and developers. Only by actively incorporating the public can the full range of

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119 Reason for this provision is to prevent *ad hoc* action groups from taking part.
120 See BVerwG 28 p133.

development alternatives and impacts come to light.[121] Being included in the decision-making process, the public as well as the individual citizen are more likely to accept decisions, which are detrimental to their interests.[122]

s10(1) 3 BImSchG and s7(1) 2 AtVfV[123] provide for preclusion of objections, which are not raised in time, *ie* within two months from the day of promulgation of the draft plans (s10(3) 2 BImSchG; ss7(1); 6(1) AtVfV). This is of tremendous benefit to the applicant because it helps speed up the procedure and establish legal security (`Rechtssicherheit´). It stops people from bringing a legal action[124] against the applicant or the administration based on objections, which could have been raised within the two month period.[125] After the deadline, the applicant can ascertain the objections he is to be confronted with. The disadvantages connected with the formalised and complicated procedure of public

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121 See W V Kennedy `The Directive on Environmental Impact Assessment´ EPL 8 (1982) p86.
122 *Cf* Gründling (n111) p134. See also Kennedy (n121).
123 No preclusion of objection is provided for the formal project-determination procedure (`Planfestellungsverfahren´), ss72-78 VwVfG .
124 Art. 19(4) GG (German Constitution) guarantees the right to bring a legal action against any administrative action, which affects the right of the demandant.
125 See BVerwGE 60 p301ff.

participation are, on the whole, levelled out by the preclusion.

According to a new EC directive[126], members of the public are entitled to a range of information about environmental affairs. The aim of the directive is to encourage the public to demand changes in legislation. Under the new directive, regular national reports on the state of the environment will have to be promulgated by the member states at least once in three years.[127]

According to art 6 (2) EC-EIA (Directive on Environmental Impact Assessment) the application for a permit for projects listed in annexure I of the EC-EIA must be published together with an environmental impact statement and with any supplementary information given by the sponsor of a project (see art 5 EC-EIA); the public affected by the project must be consulted. The same rule applies to installations listed in annexure II if regarded necessary.[128] The competent authority is obliged to consider the comments of the public (art 8 EC-EIA). Details of the form of notice and public

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126 Directive on Freedom of Information on Environmental Matters (COM (88) 484 final - 88/C/335 04).
127 See EPL 19/11 (1989) p9.
128 Art 4 s1, 2 EC-EIA. For details about the projects concerned see chapter DI 3 *supra*.

participation are within the discretion of the national authority responsible (art 6 s3 EC-EIA).

b) South Africa

In South Africa, no legal obligations provide for public participation in the field of pollution control. The Environment Conservation Act 73 of 1989 provides for public participation in several cases: if the Minister of Environment Affairs or the Minister of Water Affairs or another administrative body intends to issue a regulation or a direction in terms of the Act to declare an area as (one of several kinds of) a protected area, to identify certain activities or to determine an environmental policy, a draft notice shall be published first in the Government Gazette or the Provincial Gazette (s32(1)). The draft notice shall include a request that interested parties shall submit comments within a period not shorter than 30 days after the publication (s32(2)(b)).

The above provision has been welcomed as 'a most refreshing innovation'.[128] Public participation is,

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129 See MA Rabie 'A new deal for environmental conservation: aspects of the Environment Conservation Act 73 of 1989' 1990 (53) THRHR p5. See, too, JI Glazewski 'A New Environment Conservation Act: an awakening of environmental law?'. De Rebus Nov 1989 p874f. Critical of this is

however, still far more restricted than it is under German law. With the exception of s32 (1) (b) in conjunction with s21 (1), public participation is only provided for planning procedures or abstract measures, but not for licensing procedures. No provision has been made that the submitted comments have to be taken into account by the administration.[130] Publication only in the Government Gazette or Provincial Gazette, and not in newspapers generally confines the circulation of the draft notice considerably; only a few people will read the Gazette.

The Physical Planning Act (88 of 1967) contains very similar provisions for public participation.[131]

c) Conclusions

The significance of public participation in licensing procedures can hardly be overestimated. It is of vital importance for an efficient environmental law that the public is involved in administrative procedures and that the executive is to render an account of its decisions. The success of German environmental law during the last decade is largely due to public participation.[132] No

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PD Glavovic 'Some Thoughts of an Environmental Lawyer ...' 1990 SALJ 102.

130 See Rabie (n108).

131 s6A (1)(a), (4).

132 See the White Paper of the Federal Government ('Umweltbericht 1976') BT-Dr 7/5684 p9.

other improvement of South African environmental law would be easier to initiate, no other change more cost-effective. Public participation procedures cannot only be introduced at low cost; they can also lead to significant saving of public funds by avoiding misplanning.[133] It is certainly correct the efficiency of public participation procedures depends to some degree on public awareness; yet the opportunity to participate in environmental decision-making is an effective way of raising public awareness.

3. Environmental Impact Assessment (EIA)

Environmental impact assessment (EIA) procedures require decision-makers to inventory, gather information on, analyse, and take into account environmental impacts in connection with their decision. They are designed to correct the uninformed or inadequate consideration given to environmental impacts in government decisions concerning land use, natural resources, management and development projects.[134]

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133 See BVerwG (n120); Kennedy (n121).
134 See E Rehbinder & R Stewart `Environmental Protection Policy´ vol 2 (1985) p3.

Public participation is an important aspect of EIAs, since individuals may supply important data, which widens the basis of assessment. However, public participation is not necessarily linked to an EIA, and EIA procedures without any participation have been introduced in some cases. EIAs are of particular importance as far as licensing procedures for major industrial projects are concerned, even though they are not specific to pollution control law. The environmental impact of large installations cannot be assessed without thorough investigation.

The idea of EIAs is generally agreed to date from the United States' National Environmental Policy Act of 1969 (NEPA), which requires federal agencies to prepare `environmental impact statements' on `major federal actions significantly affecting the quality of the human environment' (s102(2)(c)).[135] Though no country has exactly duplicated NEPA and its procedures for EIAs, the broader concept of EIA has been embraced by many countries.[136]

135 42 U.S.C. s4332 (2)(c). See, too, MA Rabie `Disclosure and Evaluation of Potential Environmental Impact of Proposed Governmental Administrative Action' 1976 THRHR 43 f.

136 G Wandesforde-Smith `Environmental Impact Assessment in: `Trends in Environmental Policy and Law' (1980) p109ff.

a) Germany and the European Community (EC)

EIAs were introduced in Germany in 1975 in the form of a cabinet resolution.[137] The principles are spelled out by the resolution which guides federal ministries, departments and agencies in assessing the environmental impact of their actions.

The cabinet decision is relevant for draft regulations and draft administrative provisions (art I(2) para 1), administrative acts and contracts (para 2), programmes and planning procedures (para 3).

137 Principles of Environmental Impact Assessments concerning Actions of the Federal State - Bek. d BMI of 12.9.1975 - UI1-500 110/9 (GMBl. p717).

The annexure to the cabinet decision contains the following procedural scheme:

`I Preparatory procedure
1. Description of the task
2. Description of the proposed action
II Examination of the environmental impact
3. Statement, whether a (negative) environmental impact can be ruled out
III Examination of compatibility with environmental concerns
4. Investigation into effects on the environment
- Analysis of the actual situation
- Prognosis of the future situation without the proposed action
- Prognosis of the future situation with the action
- Comparison of predictions
5. Assessment of effects on the environment
6. Examination of remedial measures and alternatives
in the case of harmful environmental effects
IV Consideration of other criteria.´

The cabinet resolution is not applicable if some protection for the environment is provided for by other legal provisions.[138] No kind of public participation is required. Moreover, the federal government has not enforced EIAs consistently. The result of the cabinet decision has been minimal[139], despite the promising wording.

138 Art I (4) of the annex to the Cabinet decision (n137).
139 See Wandesforde-Smith (n136) p110f. See also the critical remarks of MA Rabie `Strategies for the implementation of environmental impact assessments in South Africa´ 1986 SA Public Law 20f.

According to the Directive on Environmental Impact Assessment of 1985 (EC-EIA) of the European Community, member states are to implement EIAs in their national legislation.[140] Before the European Commission published its 'Proposal for a Council Directive concerning the environmental effect of certain public and private projects' in 1980[141], the document passed through about twenty draft versions over a period of five years.[142] It took another five years before the Council finally adopted the directive after further amendments. As it is a compromise between largely differing opinions of various European governments, the directive differs substantially from the preliminary drafts: it is far less detailed and many of the procedural issues initially covered by the drafts are not contained any more. However, because of the shortcomings of the EIA provisions of 1975, the legal situation in Germany has been improved considerably by the directive as far as EIAs are concerned.[143]

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140 Directive 85/337/EEC (OJ No L 175/40).
141 OJ No C 169, 9 July 1980, p14.
142 See Rehbinder & Stewart (n134) p104.
143 *Cf* R Schmidt 'Einführung in das Umweltrecht' (2nd ed 1989) p15ff.

The Directive is made up of fourteen articles and three annexures. Art 1(1) defines the scope of the Directive (`public and private projects with possibly significant environmental impacts´). Art 3 states the general factors protected by the Directive and therefore to be taken into account in an assessment: human beings, fauna and flora; soil, water, air, climate and landscape; interaction between the first two groups; material goods and cultural heritage.

Art 4 and 5 refer to the annexures I and II, both of which are lists of specific development projects: annexure I lists projects for which an EIA is obligatory for the EC member states[144]; for the projects enumerated in annexure II[145] EIAs are left to the discretion of the member states.[146]

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144 For instance oil refineries (no 1); power stations with an output of more than 300 MW and nuclear power stations (no 2); `integrated´ iron and steelworks (no 4) `integrated´ chemical plants (no 6); Motorways, long distance railway lines and airfields with a runway of at least 2100m (no 7); refuse incinerators (no 9).

145 For example oil and gas exploration (no 2b) and production (no 2 f and g), mining activities (no 2 c-e and h-k); metalworking (no 4).

146 Initially - a simplified EIA procedure was compulsory for the projects listed in annexure II, too, see Rehbinder & Stewart (n134) p104.

Art 5 in connection with annexure III, specifies the information to be provided by the applicant or sponsor of a project; art 6 and 9 deal with public participation and the informing of the general public.

According to art 2(2) EC-EIA it is left to the discretion of the member states to integrate EIAs into their existing licensing procedures instead of introducing an independent EIA procedure. This clause is due to German pressure; the German Federal Government had feared that its codified, complex planning systems, often extending over various levels of government and involving various levels of decision, would be threatened.[147] Consequently, Germany has been taking advantage of the provision by fitting EIAs into existing procedures[148] (see UVPG - Environmental Impact Assessment Act of 1990).[149]

A major problem for the German legal system is the fact that according to the German Constitution, the authorising body did not normally have discretion.[150] Under the existing procedures, the authority was only

147 See Rehbinder & Stewart (n134) p106.
148 For instance s73 VwVfG (Administrative Proceedings Act) and s18 FStrG (Federal Roads Act); see R Schmidt (n143) p17.
149 BGBl I p1080
150 Chapter DI 1 *Supra*.

required to ensure that the applicant complied with the legal requirements (*eg* pollution standards). As far as the permit procedure under the BImSchG (Federal Immission Control Act) is concerned, the applicant had to comply with the ambient air quality and emission standards determined by regulations (s6 para 1 BImSchG)[151], the requirements prescribed by the BImSchG itself (above all the provisions that all possible means to reduce emissions have to be taken, s5 (1) para 2 BImSchG)[152], and other 'public law provisions' (s6 para 2 BImSchG), *viz* the BauGB (Building Law Act) and the applicable zoning ordinances. Under the EC-EIA this system has to be completely altered because all types of environmental impact will have to be considered.[153]

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151 For instance 1st BImSchV (Furnaces Regulation), 2nd BImSchV (Regulation on Restriction of Halogenous Hydrocarbons), 10th BImSchV (Regulation on Restriction of PCB, PCT and VC), 13th BImSchV (Regulation on Large Combustion Plants).

152 The TA Luft (Technical Directive on Air Pollution Control) and TA Lärm (Technical Directive on Noise Abatement) issued by the Minister of the Environment are guidelines for the authorizing bodies for the interpretation of the provision. If the applicant complies with the standards contained in the Technical Directives, the Administration can - in the absence of special features - proceed on the footing that he is taking all possible measures.

153 See, too, Schmidt (n143) p18; Rehbinder& Stewart (n134) p106.

EIAs require a large margin of discretion for the authority.[154] This is not compatible with the German constitution, and has not been resolved as yet.[155]

The major shortcoming of the EC-EIA is the limited scope of the Directive. EIAs are obligatory for only relatively few classes of projects [156] (annexure I); plans and programs are not subject to EIAs (art 1(1),(2) EC-EIA). Furthermore, the European Parliament expressed `extreme concern´ that member states could regard art 4 (2) EC-EIA as `a licence to exempt all projects of the classes listed in annex[ure] II from environmental impact assessment´.[157]

In contrast with the EC-EIA, NEPA is not limited to specific classes of projects; its is applicable to all `major federal actions´. The EC-EIA approach might avoid the ambiguities of NEPA by listing the projects subject to EIA; but it is certainly counter-productive to leave most classes of projects to the discretion of the member states. For several governments this `compromise´ was no

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154 For the problems concerning judicial review see Chapter DI 4 *infra*.
155 See Schmidt (n143) p18.
156 According to art 1 (2) EC-EIA `project´ means - erection of buildings or installations - other interference in nature and landscape including mining activities.
157 See EPL 17/5 (1987) p197f.

more than a disguised refusal to introduce EIAs for those actions.[158]

Yet, not only public but also private actions are dealt with by the EC-EIA[159], which extends the scope of the Directive considerably in a free-market economy. However, the courts in the United States have interpreted the `major federal projects´ to include private developments subject to federal (not local or state) licensing approval, such as energy projects.[160]

b) South Africa

The South African Council for the Environment has criticised the traditional approach of EIA, which might be interpreted as a negative process with anti-development and not constructive effects. `EIA was a reactive tool concerned only with critically investigating the environmental implications of proposals that were already in an advanced stage of formulation´.[161] Instead the Council suggests an

158 *Cf* Rehbinder & Stewart (n134) p108.
159 See art 1(1) EC-EIA.
160 Scientists Institute for Public Information v AEC (SIPI), 481F. 2d 1079, 1088-1089 (D.C. Cir. 1973). See also FR Anderson, DR Mandelker & AD Tarlock `Environmental Protection: Law and Policy´ (1984) p701ff.
161 Council for the Environment `Integrated Environmental Management in South Africa´ (1989) p3. See also RF Fuggle `Integrated Environmental

'Integrated Environmental Management (IEM)' procedure, which ensures

> 'that environmental considerations are efficiently and adequately taken into account at all stages of the development process... IEM applies to all categories of proposed actions, from policy formulation to devising general programmes for effecting policies, to the initiation of specific projects'[182]

The approach of the Council for the Environment might indicate a misinterpretation of the main purpose and the effects of EIA procedures. The purpose is not so much to guide the administration through the decision-making process, but to ensure public participation and to provide verification that the authority has indeed taken into account the environmental impact of a measure.[183]

Moreover, an examination of the environmental impact on the programme-level can only be enforced as far as public

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Management: An Appropriate Approach to Environmental Concerns in Developing Countries' Impact Assessment Bulletin vol 8 (1990) p31

162 Council for the Environment (n161) p4

163 See MA Rabie 'Strategies for the Implementation of Environmental Impact Assessement in South Africa' 1986 SA Public Law 25f, 29f. DE Fischer 'Environmental Law in Australia' (1980) p146. See also Schmidt (n143) p16f and Wandesforde-Smith (n136) p102, 120. The US Supreme Court has reiterated on several occasions that the thrust of environmental impact statements is 'essentially procedural' and does not empower federal courts to set aside decisions which prefer development over environmental values; see Rehbinder & Stewart (n134) p135.

activities are concerned.[184] Apart from the transport sector (roads, railway lines, airports, harbours and waterways) almost all activities with significant environmental impact are private in market economies.[185]

Even an EIA process at the (late) project stage makes a licence procedure considerably more complicated, time-consuming and costly.[186] An effective EIA process at several stages might paralyse any development. In a developed and democratic society it can be expected that the administration takes environmental issues seriously into account.[187] A late EIA illuminates those considerations. If the EIA brings it to light that the authority did not fulfil its duties in the licence procedure, the administration would be under pressure to change its procedures in future. Nothing is more embarrassing for a government the cancellation of a project by the court, on which considerable amounts of public funds have already been spent.

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164 The Council for the Environment (n161) wants to *encourage* private sector proponents, see p8.

165 In some western countries the energy-supply sector (power stations and power lines) is state run, too.

166 See Resolution of the Bundesrat (Senate of the German Federal Parliament) of 30 Jan 1981, BR-Dr 413/80 and the reservations of the British Department of the Environment, EPL 7 (1981) p20.

167 *Cf* Wandesforde-Smith (n136) p102.

It is not correct either that the `traditional´ EIA procedure is a destructive one `emphasising the negative aspects of the proposal´ and leading to `a difficult "either-or choice"´.[168] An improvement through special administrative obligations (`Nebenbestimmungen´, esp. `Auflagen´) is the typical result of an EIA in Germany, not the refusal to grant a permit; obligations can, for instance, provide for additional pollution control measures, reduced size of an installation or afforestation.[169]

The proposal for an IEM procedure seems to be quite theoretical. The process of investigating and considering the environmental impact of an activity cannot be guaranteed by a formalized or `mechanical´

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168 So the Council for the Environment (n161).

169 The principle of proportionality of a decision (`Verhältnismässigkeitsprinzip´), derived from the fundamental rights (`Grundrechte´, art 2-19 GG) of the German Constitution is perhaps the most important constitutional principle in Germany. The public authority is obliged to grant a permit with a proviso instead of refusing it, if the latter is sufficient to achieve the desired effect (ban on excessive actions, `Übermassverbot´) BVerfG (Federal Constitutional Court) E 23, 127 (133); 35 382 (400); see also BVerfGE 6, 389 (493); 19, 342 (348f); K Stern `Das Staatsrecht der Bundesrepublik Deutschland´ vol 1 (1977) pp114, 671f; K Hesse `Grundzüge des Vervassungsrechts der Bundesrepublik Deutschland´ (12th ed. 1980) p77. BVerfGE 38, 281 (302): `An official action must be suitable to achieve the legislator´s purpose, but it must also be necessary, *ie* the goal cannot be reached by other means, which encumbers the individual less´.

process. Success of environmental protection depends on the attitude and knowledge of the officials involved and on public awareness.[170] EIA can help to make public pressure effective.

The IEM procedure might be of use as an *internal* guideline for the administration as far as public activities are concerned. An IEM/EIA procedure without 'public scoping' could, however, prove to be as ineffective as the German EIA process of 1975 was.[171]

The legal basis for EIAs in South Africa is provided by the Environment Conservation Act (73 of 1989). s22(2) provides for 'reports concerning the impact of the activity in question and of alternative activities on the environment'. Yet the requirement of EIAs is still at the discretion of the Minister of Environment Affairs; environmental impact reports are only required for activities identified by the Minister in terms of s21(1) and (2) (see s22(1),(2)). So far no activities have been identified[172]. The practical impact of the provision

170 See MA Rabie 'Legal Remedies for Environmental Protection' 1972 CILSA 280.
171 *Supra*. *Cf* Wandesforde-Smith (n136) p119.
172 See J I Glazewski, 'The Law's Response to Environmental Challenges' Earthyear 90 p24; J Clarke 'The Fate of the Nation' Sunday Star Magazine 22 April 1990 p44.

concerning EIAs is therefore still nil. Another shortcoming of the provision is that even if the Minister of Environment Affairs intends to declare an action an 'identified activity', he still needs the concurrence of other ministers involved with the activity in question; such concurrence is naturally difficult to achieve because of the antagonistic interests which are represented by the ministers.[173]

As far as the identification of 'limited development areas' in terms of s23 is concerned, the Minister of Environment Affairs only has to *consult* 'each Minister charged with the administration of any law which in the opinion of the Minister relates to a matter affecting the environment in that area...' But again, it is at the discretion of the Minister of Environment Affairs whether he wants to 'request the person to submit a report ... concerning the influence of the proposed activity on the environment in the limited development area'.[174]

173 See JI Glazewski 'A New Environment Conservation Act: an awakening of environmental law' 1989 De Rebus 873. Glazewski points out that in many developed country, the converse applies: the other government departments cannot carry out certain projects unless given an environmental clearance. Under the German Constitution the Federal Government, *ie* the cabinet as a whole, shall decide on differences of opinion between Federal Ministers (art 65 GG)

174 s23 (4)(d) and (3) of the Environment Conservation Act 73 of 1989.

Consequently, the South African approach to EIA appears similarly half-hearted as the German one of 1975. It seems unlikely under the current circumstances that the Minister concerned will push on with the introduction of EIAs.[175]

c) Conclusions

Provisions for environmental impact assessments seem to be a useful supplement to public participation procedures. EIAs should, however, not be left to the discretion of the executive, as it is the case in South Africa.[178] They should be mandatory for all major installations and actions which might have considerable environmental impact. It is advisable to specify such a provision by listing the most important projects, in order to avoid ambiguities.

Even if obligatory EIAs are not introduced in South Africa, *eg* because of financial concerns, the ministers responsible should at least lose the right to veto a declaration of identified activities by the Minister of

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175 PD Glavovic 'Some Thoughts of an Environmental Lawyer ... ' 1990 SALJ 112. Only time will tell, if the new Minister of Education and Environment Afairs, who was appointed in November 1990, will adopt a different course.

176 See n173 *supra*.

Environment Affairs.[177] It would be compatible with South African constitutional law to promulgate an act which provides for the resolution of a disagreement between cabinet ministers by a majority vote. This would prevent single members of the cabinet from quashing environmental initiatives.

4. Judicial control of administrative actions

In order to avoid carelessness of the executive, supervision of governmental and administrative activities is of great importance.[178] The most effective form of supervision is external control effected by independent judicial bodies.

The effects of lack of any control of the executive can be seen in former East Germany: According to the legislation, the atmosphere had to be preserved `to the highest extent´ in its natural composition. It was the `duty´ of state authorities to ensure air purity .[178] Irrespective of these provisions, the environmental

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177 Glavovic (n175) 111f criticises the requirement of concurrence of the relevant ministers.

178 See Schmidt-Assmann in: T Maunz, G Düring, R Herzog & R Scholz `Grundgesetz Kommentar´ vol 2 (1986) article 19 para 1

179 See RB Macrory, Z Madar & KC Onz ´Air Purification policy´ EPL 17/5 (1987) p186.

destruction reached an inconceivable extent since no independent body could enforce the legislation. Air, water and soil pollution remained almost completely uncontrolled. Tap water in the most polluted areas (*eg* Bitterfeld), was noxious.; a lake near a manufacturing plant for photographic films was so badly polluted by argentiferous compounds that the water could have been used for reclamation of silver; and the sulphur dioxide emissions per square kilometer were higher than in any other country.[180]

In this chapter, procedural questions, the problem of *locus standi* and the remedies available for control of administrative actions are discussed.

a) System of Administrative Courts

The most important provision in German law providing for judicial review of administrative actions is Article 19(4)GG (German constitution):

> 'Should any person's right be infringed by public authority, he may appeal to the court. If jurisdiction is not specified, recourse shall be to the ordinary courts'.

180 See Umweltbundesamt 'Jahresbericht 1989' p145f

The objective of the provision is to counter administrative abuse of power.[181] It has proved to be highly successful; the executive always keeps in mind the possibility of judicial review of its decisions.[182] The guarantee of access to the courts (`Rechtsweggarantie´) forms part of the German bill of rights. [183]

(1) Procedural questions

s40 VwGO (Administrative Courts Act) specifies the administrative jurisdiction; administrative courts which have full independence from the executive influence have been established.[184] All public law litigation is within their competence apart from constitutional law[185], unless allocated to another court[186] (s40 (1)1 VwGO).

ss68ff VwGO provide that an objection (`Widerspruch´) to the administrative act is to be lodged within a one month period, before the matter may be brought before the

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181 BVerfG (Federal Constitutional Court) E 10, 2 64 (267); 35, 263 (274); 51, 268 (284).
182 Schmidt-Assmann (n178).
183 Herzog in: Maunz, Düring, Herzog & Scholz (n178) preliminary remarks to article 19 para 5.
184 Art 97 (1) GG; s25 DRiG (Deutsches Richtergesetz - German Judiciuries Act). See MP Singh `German Administrative Law´ (1985) p114.
185 For Constitutional law cases the `Bundesverfassungsgericht´ (Federal Constitutional Court) is competent, see art 93 GG.
186 For instance fiscal court jurisdiction; jurisdiction for social insurance litigation; disciplinary jurisdiction.

administrative court. The administrative act, order or individual decree (´Verwaltungsakt´) is automatically suspended by an objection within the period prescribed. In an internal control, the lawfulness as well as the expedience of the action will be reconsidered by a higher administrative body[187] (`Vorverfahren´)[188] The initial administrative act will be replaced by the ruling on the objection (`Widerspruchsbescheid´).[189] Within another period of one month after announcement of the administrative ruling, the applicant can institute an action[190], unless, of course, he has been granted relief.[191]

(2) *Locus standi*

According to s42 (2) VwGO the plaintiff has to assert that he considers himself aggrieved by the administrative action. In order to have *locus standi* a grievance must be

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187 Before the lower administrative body passes the objection to the higher one (`Widerspruchsbehörde´), it reconsiders the decision by itself; it may grant relief and change its decision, see ss72, 73 VwGO.
188 See s68 VwGO.
189 See s79 VwGO.
190 See s74 VwGO.
191 An internal control does not take place as far as actions by a supreme federal authority (`oberste Bundesbehörde´) or a supreme state authority (`oberste Landesbehörde´) are concerned, s68(1) VwGO, *eg* government departments. In these cases the matter may be brought before the courts immediately.

possible in the opinion of the court.[192] The purpose of 40(2) VwGO is to preclude the *actio popularis*[193] (citizen's action), in order to prevent a surge of litigation[194]. This might be called the `traditional' and `narrow' approach because some personal interest of the applicant must be affected.[195] In practise however, standing rarely causes problems any more, as far as administrative actions with regard to pollution are concerned.

The parties of an individual administrative relationship always have *locus standi*; these are the `addressees' of an onerous (`belastend') or status-creating (`gestaltend') administrative act or people who have been refused a beneficial (`begünstigend') disposition.[196] Problems can occur as far as standing of third parties is concerned, who want to interfere in other people's individual relationship, because they feel aggrieved; normally an action is taken by an individual against a

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192 See BVerwG (Federal Administrative Supreme Court) E22, 113; DÖV 1967, 856.
193 See BVerwGE 52, 122 (129).
194 *Cf* L Gündling `Public Participation in Environmental Decision-Making' in: `Trends in Environmental Policy and law' (1980) p148, who does not agree.
195 So E Rehbinder & R Stewart `Environmental Protection Policy' vol 2 (1985) p155; L Gündling (n194) p147.
196 In these cases fundamental rights (`Grundrechte') of the `addressee' are always affected, at least art 2(1) GG (universal right of liberty).

licence granted to somebody else (`Drittwiderspruchsklage´).[197]

The central question to be considered by the court is whether the provision, which is allegedly violated by the administrative decision, is designed to protect the individual interests of the plaintiff over and above the public interest. In other words: the courts consider whether a statutory or public law right (`subjektiv-öffentliches Recht´) has been conferred upon the plaintiff by the provision in question. The plaintiff does not have *locus standi* if merely the public in general is protected by the provision.[198]

The administrative courts - especially the BVerwG (Federal Administrative Supreme Court) - have lowered the requirements for standing considerably in the course of the last two decades. Initially *locus standi* was merely derived from art 14 GG (guarantee of property), and protection against an installation therefore only provided for land owners.[199] Now almost all pollution control provisions as well as law on planning for building projects are regarded to protect the neighbours

197 See Singh (n184) p120; HU Erichsen & W Martens (ed) `Allgemeines Verwaltungsrecht´ (5th ed 1981) p188ff.
198 BVerwG NJW 1983, 1507 at 1508.
199 See BVerwGE 32, 173 at 178f.

and the people living in the vicinity of a proposed installation[200]. In a far-reaching decision, the court granted all citizens of (West) Berlin standing for a suit against the permit for a power station in the western part of Germany, several hundred kilometers away. It stated that the population of (the former `political island´) Berlin stood out clearly from the public in general. A suite against the installation was therefore no *actio popularis*.[201]

In Germany associations can only assert their own `personal´ interests.[202] There can be no class action instituted by associations in the interest of the general public.[203] An exception is s29 BNatSchG (Federal Nature Conservation Act), which allows participation of acknowledged societies in the field of nature and landscape protection. The refusal to introduce standing for associations can be explained by the procedural

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200 For instance ss5(1) para 1, 22(1) para 1 BImSchG; s7(2) AtG; ss34, 35 BauGB (Building Law Act); see BVerwGE 56, 110(124); NJW 1983, 1507 (1508); UPR 1982, 312; OVG (Administrative Court of Appeal) Lüneburg GewArch 1981, 341.

201 OVG Lüneburg GewArch 1986, 431.

202 This can be derived from art 19(4) GG, for instance if the association itself is land owner. That does, however, not mean that the association can bring an action in the interest of its members, see Schmidt-Assmann (n178) para 269f.

203 BVerwGE 54, 211 (219f); 36, 199; DVBl 1980, 1010; DÖV 1980, 649.

requirement of a grievance and the rejection of an *actio popularis*.

(3) Remedies and review powers

A typical goal of an administrative court action against an environmentally detrimental activity is the annulment of a permit (`Anfechtungsklage´) or a judgement commanding the executive to take measures against the polluter (`Verpflichtungsklage´ or `allgemeine Leistungsklage´).[204] The administration, however, can also be ordered to take remedial actions if damage has already occurred (`Folgenbeseitigungsurteil´).[205] Such actions could for instance, be cleaning-up measures or the demolition of an installation which has been erected on the strength of an invalid permit and therefore illegally.[206]

Another possible target of an administrative court action is an interdict, which will be granted, if the infringement of the plaintiff´s (public-law) right has already occurred and continues to persist

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204 See s42(1) VwGO.
205 BVerwG DÖV 1971, 857; Erichsen & Martens (n197) p493ff.
206 See OVG Lüneburg DVBl 1962, 418 (420f); 1975, 915 (917f).

(`Unterlassungsklage´) or is imminent (`vorbeugende Unterlassungsklage´).[207]

According to s80 VwGO the administrative act is automatically suspended in most cases while a suit is pending.[208] Immediate execution (`sofortige Vollziehbarkeit´) can be declared by the administration in a case of urgency; this prevents or brings to an end the automatic suspension of the administrative act. The court can, however, restore the suspension on motion, if it does not regard the action as urgent or assumes the illegality of the administrative act (s80(5) VwGO).[209]

The review power of administrative courts is wide.[210] The court will reconsider the merits of the action, either partially or entirely.[211] The scope of the review depends on the status of the allegedly violated law. If the plaintiff claims infringement of a statutory or regulatory provision, only the observance of the clause

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207 See BVerwG DVBl 1971, 746f; OVG Berlin DVBl 1977, 901ff; see also BVerwG 1977, 897ff.
208 Exceptions are, for example, orders concerning tax liabilities, see s80(1) VWGO.
209 The sponsor of a project whose permit has been challenged, can apply for termination of the suspensory effect, too, see s80(5) VwGO.
210 See Rehbinder & Stewart (n195) p157.
211 See s113(1) VwGO.

in question will be examined by the court.[212] In cases of administrative discretion, the decision will be reviewed for a misuse of discretion (`Ermessensfehlgebrauch´); the court will not exercise discretion by itself.[213]

If violation of a constitutional or fundamental right (`Grundrecht´) is asserted by the plaintiff, the court will have to reconsider the administrative decision entirely (for instance art 14GG, the guarantee of property and art 2(2) GG, guarantee of life and physical inviolability).[214]

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212 See VGH (Administrative Court of Appeal) Baden-Würtemberg NJW 1980, 1867; Schmidt-Assmann (n178) para 159. `Protective´ provisions, which can be reviewed completely, are for instance ss5(1) para 1, 22(1) para 1 BImSchG (pollution control requirements for installations) and s7(2) AtG (protective measures for nuclear installations), see n200.

213 s114 VwGO. Cases of misuse are `Ermessensunterschreitung´ (the executive did not realise it had discretion), `Ermessensüberschreitung´ (exceeding of discretion; the selected action was not covered by discretionary power) and - most important - `Ermessensmissbrauch´ (abuse of discretion; the decision making process was not carried out properly, for instance, because the executive did not observe the principle of proportionality). In cases where fundamental rights are affected, the an `Ermessensreduzierung auf Null´ is often presumed by the court (reduction of the discretion to zero; the administration could lawfully only take one particular decision). See Erichsen & Martens (n197) p185ff.

214 See BVerwG DVBl 1983, 899.

Under the BImSchG[215] and the AtG[216], objections can only be put forward in court if they have already been raised in the public participation procedures.[217] The purpose of the preclusion of objections is to speed up the licence procedures and to prevent delaying tactics of the complainants[218], objections should not be held back, but should be submitted as soon as possible.[218]

(4) Conclusions

All in all, the system of administrative courts has proved very successful, even in the field of environmental law[220]. Certain shortcomings in regard of standing appear, as far as nature conservation and water protection are concerned, because access to the court is normally only granted to people in the vicinity.[221] Especially in the sphere of water pollution, people remote from the polluter may be more affected than the

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215 s10(3) BImSchG.
216 s7b AtG, s7(1) AtVfV.
217 See chapter DI *infra*.
218 See R Schmidt `Einführung in das Umweltrecht´ (2nd ed. 1989) p46.
219 This does not violate art 19(4) GG, see BVerfGE 61, 82 at 110.
220 At the 56th German Lawyer´s Congress (`Deutscher Juristentag´) in 1986, the overwhelming majority of advocates and judges regarded the protection of the individual in German environmental law as effective; explicitly mentioned was the access to the courts via protective provisions (`Schutznormtheorie´), see NJW 1986, 3074f. See also Singh (n184) p114f.
221 See Rehbinder & Stewart (n195) p155; BVerwG NJW 1981,362.

immediate neighbourhood. However, standing will be granted to anybody who is directly affected by, for instance, threats to the quality of tap water or by a polluted river irrespective of the distance between polluter and aggrieved person.

As far as nature conservation and landscape protection is concerned, shortcomings are partly compensated for by the rights granted to conservation societies.[222]

b) South African common law

In South Africa there are no administrative courts; administrative appeal tribunals are provided in a few cases.[223] Judicial review is only provided by the ordinary law courts.[224]

(1) *Locus standi*

Because the *actio popularis* has never formed part of South African law[225], the necessary *locus standi* will

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222 See after n203 *supra*.
223 Air Pollution Appeal Board (ss13 25 of the Atmospheric Pollution Prevention Act 45 of 1965); Regional Appeal Boards (s25).
224 MA Rabie `Administrative Law Reform and Environmental Law´ 1981 THRHR 50.
225 Bagnall v The Colonial Government (1907) 24 SC 470; L Baxter `Administrative Law´ (1984) p664ff.

have to be proved.[228] In order to have standing to challenge an administrative act, an individual must prove that he has some legal right or recognised interest in the action; the most common definition for the required degree of personal interest is `sufficient interest´.[227]

A variety of individual rights and interests are recognised in the administrative-law relationship: private-law rights as well as common-law freedoms, rights and privileges.[228] It is, however, controversial as to whether statutory or public-law rights are sufficient, in other words, if those protected by statute or under statutory schemes have standing to seek judicial enforcement of the regulatory provision.[229]

The parties of an individual public-law relationship always have sufficient interest in specification of the general legislative norm; thus they can seek judicial

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226 W Bray `*Locus Standi* in environmental law´ 1989 CILSA 33ff.

227 See Director of Education, Transvaal v McGagie 1918 AD 616, 628; Smalberger v Cape Times Ltd 1979 (3) SA 457(C), 462. See also Baxter (n225) p653; Bray (n226) p35. In the United Kingdom: s31(3) of the Supreme Court Act 1981.

228 M Wiechers `Administrative law´ (1985) p73.

229 See on the one hand: BEF (Pty) Ltd v Cape Town Municipality 1983 (2) SA 387 (C), 400D - 401H; Patz v Greene & Co 1907 TS, 427, 433. On the other hand: Lurie v Chairman Beaufort West Tattersall Club 1983 (2) SA 298 (C), 307 B - 308 C. See also Wiechers (n228) p73ff.

control.[230] In a general relationship the individual does not have standing to vindicate the public interest; but where legislation has been enacted in the interest of a particular group or class of people, every member of the group may approach the court, if the very same action infringes his personal interest, even if it infringes the same personal interest of all members of the group.[231]

It is, however, controversial as to whether the same rule applies where the public at large is concerned. In this case it might be necessary that the plaintiff is suffering or will suffer some personal damage over and above that sustained by members of the public in general.[232] Public authorities, *eg* municipalities, have *locus standi* to bring administrative illegalities before the court as representatives of the public interest.[233]

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230 Bray (n226) p43.

231 Patz v Greene (n229); Roberts v Chairman Local Road Transportation Board (1) 1980 (2) SA 472 (C); Baxter (n225) p655ff. See also Bamford v Minister of Community Development and State Auxiliary Services 1981 (3) SA 1054 (C).

232 See Von Moltke v Costa Areosa (Pty) Ltd 1975 (1) SA 255 (C) 258; Bray (n226) p47; in opposition to it Baxter (n225) p655ff.

233 Administrator Transvaal and IRS Investments v Johannesburg City Council 1971 (1) SA 56 (A); East London Municipality v Ellis and the East London Harbour Board 1907 EDL 261; Bray (n226) p41f, 49; Baxter (n225) p662ff. See also the Botswanan decision, Attorney General of Botswana v Queen Notha (Civil Case 1 of 1981), 1982 CILSA 227.

The most complicated issue under South African as well as under German law[234] is the problem whether an applicant, who is not directly involved in an individual relationship, but suffers certain consequences as a result of this relationship (*eg* the granting of permission to somebody else), has *locus standi*.[235] Persons outside a particular individual administrative law relationship will have to prove some personal interest in order to be entitled to judicial review of an administrative action.[236] Just as in Germany[237] the court will consider whether the infringed legislation has been enacted in the interest or for the protection of the plaintiff[238], irrespective of other purposes of the provisions in question.[238] A major difference in practice, however, is that South African courts have been reluctant to recognise statutory rights of third parties.[240] In Germany, as mentioned above, the courts no longer focus on the personal interest of the

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234 n197 *supra*.
235 See Wiechers (n228) p278; Bray (n226) p44.
236 Wiechers (n228) p278f; Bray (n226) p44; see also Baxter (n225) p660.
237 n198ff *supra*.
238 See Director of Education, Transvaal v McCagie (n227) p627; BEF (Pty) Ltd v Cape Town Municipality (n229).
239 Roodepoort-Maraisburg Town Council v Eastern Properties (Prop) Ltd 1933 AD 87, 98.
240 See for instance Lurie v Chairman Beaufort West Tattersall Club (n229). See also Bray (n226) p44, 36.

plaintiff, which has to be infringed, but rather on characteristics, which distinguish him from the general public. As a result the rule has been developed that people staying in the vicinity of a polluter are protected by pollution control provisions.[241]

Under South African law, associations are not entitled to sue on behalf of the public or their members. They may only bring a matter to court if their own interest is infringed.[242] In an exceptional case, *locus standi* for an interdict was granted to the Society for the Prevention of Cruelty to Animals (SPCA)[243], because the SPCA was well established and recognised and had received statutory recognition in the Animal Protection Act 71 of 1962[244]. It 'qualifies as an organisation entitled to seek an interdict in an appropriate case, where harm, injury or cruelty is apprehended'[245]. In Transvaal Canoe Union v Butgereit[246], Eloff DJP held that as the Canoe Union's own interests were involved it had *locus standi*

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241 n201 *supra*.
242 South African Optometric Association v Frames Distributors (pty) Ltd T/A Frames Unlimited 1985 3 SA 100(D), 104-5.
243 Society for the Prevention of Cruelty to Animals (SPCA), Standerton v Nel & Others 1988 (4) SA 42(W).
244 See s8 Animals Protection Act 71 of 1962.
245 n243 *supra*.
246 1986 (4) SA 207 (T).Before the Appelate Division *locus standi* of the Traansvaal Canoe Union was not contested any longer, 1988 (1) SA 759 (AD) at 765.

to bring the case; it seems, however, that not the interests of the plaintiff (a voluntary association whose members consisted of several canoe clubs) but rather the interests of the member clubs were affected. Nevertheless, conservation societies and environmental groups have until now not been granted *locus standi* to challenge administrative acts concerning pollution and pollution control.[247]

(2) Remedies and review powers

The remedies available for judicial control of administrative actions are the interdict, the application for judicial review, the *mandamus*, the declaratory order and - as an exceptional remedy where the possibility is created by an act of parliament - the appeal.[248] Only the first two are believed to be practically effective remedies for protection of the environment.[249]

The interdict is potentially one of the most valuable remedies in the field of pollution control since it is

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247 The legal situation in South Africa in this respect is similar to the German one, see n202f *supra*.

248 See RF Fuggle & MA Rabie `Environmental Concerns in South Africa´ (1983) p48.

249 MA Rabie & C Eckard `*Locus Standi*: The administrative´s shield and the environmentalist´s shackle´ 1976 CILSA 141f.

designed to regulate future conduct.[250] Even though a private law remedy, the interdict is nevertheless applicable to prevent an administrative action, which has or will have detrimental effects on the environment.[251] An interdict will only be granted where no other adequate remedies are available at the time of the application and where the applicant would otherwise suffer irreparable damage.[252] The main problem is that in order to have *locus standi* the applicant must prove some personal interest to be infringed.[253] Interdicts have several times been granted to enforce town planning schemes[254], but apparently not as yet to third parties challenging the licence for an emitter.[255]

The *mandamus* or mandatory interdict is aimed at forcing the authority to comply with statutory duties.[256] It is a limited legal remedy; the administration cannot be compelled to do anything it is not obliged to do under

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250 Fuggle & Rabie (n248) p39.
251 Rabie & Eckard (n249) p141f.
252 Wiechers (n228) p267. See also Reserve Bank of Rhodesia v Rhodesia Railways 1966 (3) SA 656 (R).
253 See n226ff *supra*.
254 See for instance Bamford v Minister of Community Development and State Auxiliary Services (n231); BEF (Pty) Ltd v Cape Town Municipality (n229).
255 See for instance Von Moltke v Costa Areosa (Pty) Ltd (n232), where public nuisance by initiating development in the Sandy Bay area was unsuccessfully challenged.
256 Baxter (n225) p687ff; Wiechers (n228) p268.

the statute.[257] The *mandamus* can be sought to force the executive to exercise discretionary power[258], but it cannot prescribe to it how this power should be exercised.[259]

The declaration of rights or declaratory order may be sought where there is a clear legal dispute or uncertainty about the validity or effect of an administrative act.[260] Such an order may be applied for even if other legal remedies are available.[261]

The most important form of judicial control of administrative actions in South Africa is the common law remedy of judicial review.[262] Three forms of review may be distinguished: review of proceedings of inferior courts; review of administrative acts; review in terms of the provisions of specific statutes.[263] Judicial review

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257 Wiechers (n228) p268.
258 Bertram v Hyde 1915 CPD 815, 819; Cape Furniture Worker's Union v McGregor No 1930 TPD 682.
259 *Cf* Moll v Civil Commissioner of Paarl (1897) 14 SC 463, 468; Chotabhai v Union Government (Minister of Justice) and Registrar of Asiatics 1911 AD 13.
260 See Wiechers (n228) p268f. See, too, s19(1)(c) of the Supreme Court Act 59 of 1959.
261 See Gelcon Investments (pty) Ltd v Johannesburg City Council 1973 (3) SA 856 (W); Argus Printing and Publishing Co Ltd v Minister of Internal Affairs 1981 (2) SA 391 (W); see also Baxter (n225) p698ff, 704.
262 Fuggle & Rabie (n248) p48.
263 Johannesburg Consolidated Investment Co v Johannesburg Town Council 1903 TS 111.

is only aimed at procedural irregularities and illegalities and not at the legal or factual correctness of the decision.[264] The court cannot go into the merits of the matter. This is a crucial shortcoming of the remedy because in the field of environmental law, errors of law or errors of fact are usually challenged and not the validity of an administrative action.[265] Only where a statute provides that the administration has to take the environmental impact into account, can the failure to do so invalidate the action.[266]

The appeal is the remedy by which the merits of a decision are reconsidered by the court.[267] It is, however, not a common-law remedy and only available where parliament acts create the possibility.[268] It is an exceptional remedy and no provisions have been made for appeal to the law courts in the field of environmental law.[269] The Atmospheric Pollution Prevention Act 45 of 1965 provides for appeal to an Air Pollution Appeal Board and Regional Appeal Boards.[270] There is, however, a vast

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264 *Cf* Johannesburg Consolidated Investment Co v Johannesburg Town Council (n263); Wiechers (n228) p266.
265 See Fuggle & Rabie (n248) p48.
266 See LA Rose Innes 'Judicial Review of Administrative Tribunals in South Africa' (1963) p132.
267 Fuggle & Rabie (n248) p48.
268 See Baxter (n225) p706ff; Wiechers (n228) p263f.
269 Fuggle & Rabie (n248) p48.
270 ss13, 25.

difference between these appeal boards and an ordinary court of law; the Atmospheric Pollution Prevention Act neither requires any legal qualification for the members of the appeal boards[271] nor is their independence guaranteed.[272] Above all, appeal is only available for persons aggrieved by the refusal, cancellation or suspension of a registration certificate or pollution control requirements, but not for third parties worrying about atmospheric pollution by an installation.[273]

The legal force of an administrative act is not automatically repealed(?) by application for judicial control over the act.[274] There is, however, the possibility for the applicant to request an interim (interlocutory) interdict to `freeze' the *status quo* until final determination of the issue.[275]

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271 See s5(2): The Minister of Health and Welfare will appoint persons `who in the opinion of the Minister are suitably qualified to perform the functions devolving upon them under this Act'. Yet s6(3) provides in detail for `the chief officer and inspectors appointed under sub-section (1) shall be persons who are technically qualified to exercise control over atmosphere pollution by virtue of their academic training in the natural sciences or engineering and their practical experience in industry together with a knowledge of the problems concerning atmospheric pollution related thereto.'

272 For the question of sound legal training and guarantee of independence see Wiechers (n228) p114.

273 See ss13,25 of the Atmospheric Pollution Prevention Act.

274 See Wiechers (n228) p272.

275 Baxter (n225) p686.

(3) Conclusions

The most detrimental shortcoming of judicial control of administrative acts in South Africa is the problem of third parties having to prove *locus standi*, in particular the reluctance of the courts to recognise statutory rights[278] and their resistance to consider the merits of the matter.[277] These problems call the effectiveness of judicial control in question, at least in the field of pollution control.[278] Another crucial shortcoming is the onerous burden of proof, since the necessary data are often unavailable for the applicant; the administrative body is usually not compelled to provide the information required.[279] The German administrative courts follow the inquisitorial procedure (`Untersuchungsgrundsatz´)[280]; they have to investigate the truth without being bound by the pleadings and evidence presented by the parties. The court may require the administrative body to produce such evidence and witnesses it considers necessary to arrive at a correct decision. If information provided by the parties is not sufficient the court may use any other

276 See n240f *supra*.
277 See Wiechers (n228) p114.
278 See Rabie & Eckard (n251) p156 and Fuggle & Rabie (n248) p48.
279 See Fuggle & Rabie (n248) p48.
280 The (ordinary) civil courts in Germany follow the adversary procedure (`Parteimaxime´) - like the common-law courts in South Africa.

means at its disposal to reveal the truth. The reason for the inquisitorial procedure of administrative courts lies in the involvement of the public interest over and above from the interest of the parties.[281]

II CRIMINAL LAW

The criminal sanction is the most common legal technique for securing compliance with statutory rules.[282] A distinction can be drawn between criminal law provisions as `primary sanction´ or `sanction of direct resort´ and `subsidiary sanction´ or `sanction of indirect resort´.[283] The difference is that subsidiary sanctions are supposed to strengthen the efficiency of administrative control of an action by penalizing non-compliance with the public-law provision, while an action is outlawed directly by a primary sanction.[284]

1. Germany

Taking this distinction as a basis almost all pollution control sanctions provided by the German StGB (Criminal

281 See Singh (n184) p125.
282 See RF Fuggle & MA Rabie `Environmental Concerns in South Africa (1983) p43f.
283 See MA Rabie `Legal remedies for environmental protection´ 1972 CILSA 260f.
284 See MA Rabie `Administrative Law Reform and Environmental Law´ 1981 THRHR 49f.

Law Act) are subsidiary sanctions[285], with the exception of s311e StGB (abuse of ionizing radiation) and s330a StGB (severe endangerment through release of poisonous substances).[286] Only the latter are a separate group of pollution control tools[287], while subsidiary criminal sanctions can be regarded as `annexures´ to the administrative provisions. Consequently, penal provisions concerning environmental damage used to be part of the specific environmental protection legislation, especially the pollution control acts.[288] In an attempt to point out the turpitude of environmental destruction and to strengthen public awareness [289], most of those criminal sanctions were incorporated into the StGB in as its 28th chapter in 1980.[290]

The most important environmental provisions of the StGB are s324 (contamination of waters), s325 (air and noise

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285 See D Meurer `Umweltschutz durch Umweltstrafrecht?´ NJW 1988, 2068; R Breuer `Empfehlen sich Änderungen des strafrechtlichen Umweltschutzes insbesondere in Verbindung mit dem Verwaltungsrecht?´ NJW 1988, 2072ff.

286 See BT-Dr 8/3633 p34. P Cramer in : Schönke/Schröder `Strafgesetzbuch´ (21st ed 1983), s330a para 1; J Steindorf `Umwelt-Strafrecht´ (1986) s330a para 2.

287 See Steindorf (n286).

288 See Meurer (n285) 2065f.

289 See Breuer (n285).

290 18th Amendment of the StGB of 28 March 1980 (BGBl I p373).

pollution), s326 (waste disposal detrimental to the environment), s327 (unauthorised operation of an installation) and s330 (severe endangerment of the environment). The maximum sentence in most cases is imprisonment for 5 years or a fine in case of intentional commission and 2 years' imprisonment or a fine in case of negligence.[291] According to s14 StGB the authorised representative or members of the representative body and the management can be charged if the polluter is a company, society or legal entity.

s324 StGB covers any activity detrimental to the quality of waters and s327 StGB any illegal operation of an installation subject to permit requirements under the AtG (Nuclear Energy Act), the BImSchG (Federal Immission Control Act) or the AbfG (Waste Act). Polluting activities which cause a (merely) potential danger for man, animals, plants or material goods of considerable value (s325 StGB), waters, air and soil (s326 StGB) are penalised by ss325 and 326 StGB . Such provisions are called `abstrakte Gefährdungsdelikte' (offences dealing with `abstract' endangerment). s330 StGB penalises only

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291 The maximum penalty in s326 StGB is 3 years and 1 year respectively; in s330 the minimum sentence is imprisonment for 3 months.

real (`concrete´) danger, a so-called `konkretes Gefährdungsdelikt´.

An activity is only punishable in those cases where the person responsible has failed to acquire a prescribed permit (so-called `Verwaltungsakzessorität´, subordination to administrative law)[282]; a permit must only be valid in order to vindicate the activity, even it if has not been granted legally.[283]

Further environmental offences are s329 StGB (endangerment of protected areas) and the provisions concerning abuse of nuclear energy and ionizing radiation (ss310b, 311a, 311b, 311d, 311e, 328 StGB). Minor offences and offences serving the purpose of environmental protection only partially or indirectly are still contained in administrative law acts: ss63ff. BundesseuchenG (Federal Epidemics Prevention Act); s74 TierseuchenG (Epizootic Deseases Act); s7 DDT-Gesetz; s9 ReblausG (Phylloxera Act); s148 GewO (Industrial Code); ss40, 42 SprengG (Explosive Substances Act); s41 WHG.

292 See B Huber ´The protection of the environment in German criminal law´ 1990 CILSA 91f

293 See E Samson `Konflikte zwischen öffentlichem und strafrechtlichem Umweltschutz´ JZ 1988, 801; Meurer (n285).

It is generally acknowledged that the criminal law has failed to bring about significant progress for environmental protection.[294] According to the official police statistics[295] not even 0,5% of the registered offences have regard to the environment, in spite of a sharp increase of criminal actions against polluters.[296] Between 1973 and 1988 the number of registered environmental offences rose from 2 321 to 21 116. 56.7% of the cases were related to contamination of waters (s324 StGB), 25.2% to waste disposal detrimental to the environment (s326 StGB) and 7.9% to unauthorised operation of an installation (s327 StGB).[297] Investigations show that only 67 people were sentenced to imprisonment for environmental offences within a period of 3 years; the average penalty has been a fine equivalent to one month´s salary.[298]

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294 See Breuer (n285); Samson (n293) 801f; Meurer (n285) 2067f. See also Steindorf (n286) preliminary remarks before s324 para 4.

295 `Polizeiliche Kriminalstatistik (PKS)´.

296 See Breuer (n285) 2073.

297 Umweltbundesamt ´Jahresbericht 1989´ p29

298 *Ibid*. See also BT-Dr 11/1555 p18,37ff. Under German law fines are determined in `Tagessätzen´ (daily ra tes), which are roughly speaking the daily net income of the person convicted; the idea is that a fine should affect wealthy people as much as people with low income. If the offender omits to pay the fine, he is to serve the sentence in prison, one day for every `Tagessatz´, see ss40, 43 StGB. A fine may not exceed 360 daily rates of DM 10.000 each (DM 3.600.00, about R6.000.000), see s40(1), (2) StGB.

The cause for this inefficiency is in dispute.[299] One reason is that the administrative bodies responsible for pollution control and environmental protection hesitate to inform the prosecution authorities about infringements of environmental law; they wish to avoid the interference of the police and the public prosecutor in their domain.[300] Only 12% of criminal actions against environmental offenders were initiated on the basis of information received from administrative bodies, even though the pollution control authorities must often be aware of non-compliance with pollution standards. In most cases individuals have been the informers.[301] Moreover, the executive tries to avoid administrative litigation which might easily take several years and might result in paralysis of development. The executive often prefers informal arrangements with emitters to measures of coercion, even at the risk of inadequate compromises.[302] Once a permit has been granted, the activity can no longer be punished as an offence, because of the subsidiariness of the criminal environmental law.[303]

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299 See Samson (n293) 800ff and Breuer (n285) 2085.
300 See Meurer (n285) 2069.
301 See B Rüther `Ermittlung der Ursachen für den Anstieg der polizeilich festgestellten Umweltschutzdelikte´, Schriftenreihe der Polizeilichen Führungsakademie 1984, 63.
302 See Meurer (n285) 2069.
303 See Breuer (n285) 2073.

The predicted difficulties to obtain adequate evidence of the commission of environmental offences[304] have turned out not to be too serious: the detection rate for environmental crimes was 76% in 1988, considerably higher than the average detection rate (45.9%).[305] This was to some extent due to special police units and specialised public prosecutors[306]; even some regional courts (`Landgerichte´) have formed special divisions for environmental crimes.[307] It is, however, noticeable that most convicted offenders were employees of low rank or owners of small businesses.[308] Many suspects were civil servants in environmental (usually municipal) departments[309] charged with complicity, favouritism in office or prevention of punishment.[310]

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304 See for instance Meurer (n285) 2068; Breuer (n285) 2073. See also MA Rabie (n284) 262.
305 See `Polizeiliche Kriminalstatistik´ 1988.
306 See Meurer (n285) 2070.
307 See resolution no 37 of the 57th German Lawyer´s Congress, NJW 1988, 3004.
308 Breuer (n285) 2073f; Meurer (n285) 2071.
309 Breuer (n285) 2073.
310 See Breuer (n285) 2083f and Meurer (n285) 2070, who accept, however, punishability of public servants only in exceptional cases.

2. South Africa

As in Germany there is no general criminal law provision for environmental destruction or pollution in South Africa.[311] Environmental offences are found in a number of statutes, just as was the case in Germany before the amendment of criminal environmental law in 1980.[312]

Most environmental offences in South Africa are sanctions of indirect resort, because non-compliance with administrative law precepts is penalised.[313] ss9(2),17(4),19(5) of the Atmospheric Pollution Prevention Act 45 of 1965, s81 of the Nuclear Energy Act 92 of 1982 and s18 of the Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act 36 of 1947 are examples. s23 of the Water Act 54 of 1956 seems to be a primary sanction because 'any action which could pollute ... water' is penalised.[314] However, the provision is inapplicable for actions performed in accordance with the pollution control and prevention requirements of ss21 and 22,[315] and may therefore be

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311 See Rabie (n283) 260.
312 See Meurer (n285) 2065 and n264 *supra*.
313 See Fuggle & Rabie (n282) 44f and n284 *supra*.
314 See Fuggle & Rabie (n282) 44.
315 See subsect 2.

called subordinate to administrative control, too.[316] Primary sanctions in South Africa are, for example, s2(1) of the Prevention and Combating of Pollution of the Sea by Oil Act 6 of 1981[317] and in some cases[318] s5(6) of the Conservation of Agricultural Resources Act 43 of 1983, which prohibits spreading of weeds.

The penalties for environmental offences in South Africa are conspicuously mild. With the exception of s81(1) of the Nuclear Energy Act 92 of 1982 and s30(1)(d) of the Prevention and Combating of Pollution of the Sea by Oil Act 6 of 1981[319], the maximum penalties for first conviction never exceed 2 years' imprisonment. Even for subsequent convictions, prison sentences hardly ever

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316 It is remarkable that s23 of the Water Act is, in principle, almost identical with s324 StGB, which covers according to the definition of the provision any activity detrimental to the quality of water, too, but does actually not penalise emissions permitted in terms of the WHG (Water Resources Act). See Steindorf (n286) s324 para 24ff, 74.

317 See Fuggle & Rabie (n282) 44.

318 As far as subsect 1 and 5 are concerned.

319 The maximum penalty for violation of pollution control provisions of the Nuclear Energy Act 92 is imprisonment for 7 years (see s81 (1) (bb)); it is remarkable that the Act provides prison sentences of up to 20 years for suppression of information on gold and other minerals and disclosure of certain informations (s81 (1) (aa)). According to the Prevention and Combating of Pollution of the Sea by Oil Act 6, imprisonment of up to 5 years can be passed upon the offender (see s30 (1) (d)).

exceed 4 years.[320] Particularly light are penalties for air pollution (up to 6 months' and 1 year's imprisonment for first and subsequent convictions respectively).[321]

The fines for pollution are extremely small. They never exceed R20.000, even for the worst environmental crimes.[322] The maximum fine for air pollution is R2 000 in case of recurrence.[323] It is hard to imagine that industrial polluters are deterred by such fines.

Criminal environmental provisions in South Africa deal with activities which are regarded as being generally detrimental to the environment. They do not require proof of real danger for the environment or other objects of legal protection. Such provisions are called

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320 See for instance s18 (1) (i) of the Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act 36 of 1947 (imprisonment for up to two years); s170 (2) of the Water Act 54 of 1956 (prison sentences not exceeding 12 months for first and subsequent convictions); s23 (1) (a) (b) of the Conservation of Agricultural Resources Act 43 of 1983 (maximum prison sentences of two and four years for first and subsequent convictions respectively).

321 See s46 of the Atmospheric Pollution Prevention Act 45 of 1965.

322 See s170 (2) of the Water Act 54 (R10.000 for first, R20.00 for subsequent convictions); s30 (1) (d) of the Prevention and Combating of Pollution of the Sea by Oil Act 6 (R20.000); s81 (1) (bb) of the Nuclear Energy Act 92 (R7.00).

323 See s46 of the Atmospheric Pollution Prevention Act 45.

`abstrakte Gefährdungsdelikte´ in Germany.[324] They have a considerably wider scope of application than penal provisions, which only cover real damage.[325]

Under the German rules of criminal procedure, the burden is always upon the prosecution to prove the accused´s guilt, *ie actus reus* and causal relationship as well as *mens rea* (`Schuld´)[326]. The exception is that the accused is to set forth and prove lawful excuses (`Rechtfertigungsgründe´ or `Entschuldigungsgründe´) for his (proven) conduct, *eg* self-defence or official permission.[327] Since 1945[328] the same general principle has been accepted in South Africa.[329] However, there are, statutory exceptions, where the onus of proof has been placed upon the accused as far as *mens rea* is concerned.[330] An example in the field of pollution

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324 See Breuer (n285) 2075f and *supra*.
325 See Cramer (n286) preliminary remarks before s306ff para 2ff. Fuggle & Rabie (n282) p44; Meurer (n285) 2066.
326 T Kleinknecht `Strafprozessordnung´ s155 para 3; s261 para 23.
327 See T Lenckner in : Schönke/Schröder (n286) preliminary remarks before s13 para 49.
328 Prior of 1945 there was a tendency in South Africa to place the burden of proving absence of *mens rea* upon the accused, see for instance R v Butelezi 1925 AD 160 at 169.
329 See R v Ndhlovu 1945 AD 369 at 386f; `South African Criminal Law and Procedure´ vol I: EM Burchell & PMA Hunt (1983) p132f; vol V: AV Landsdown (1982) p194. See, too, for the British law Woolmington v DPP (1935) AC 462, (1935) ALL ER 1 (HL) at 481-2, 488.
330 See Lansdown (n329) p914f.

control legislation is provided by s23(1)(b) of the Water Act 54 of 1956:

> `If... it is proved that the accused committed any act which could pollute water... it shall be presumed, until the contrary is proved, that the accused committed such act willfully or negligently´.

s2(2) of the Prevention and Combating of Pollution of the Sea by Oil Act 6 of 1981, which places the onus of proving exceptions, exemptions and qualifications upon the accused, is on the other hand only a repetition of the general clause of s90 of the Criminal Procedure Act 51 of 1977 and of an English common law principle.[331]

The efficiency of criminal environmental law has repeatedly been questioned in South Africa.[332] Under the 25 year-old Atmospheric Pollution Prevention Act 45 of 1965 for instance, no industrial polluter has ever been sentenced, not even fined.[333] Several reasons for the failure have been advanced: the accused is strongly protected, *eg* through an onerous burden of proof upon the

331 See Woolmington v DPP (n329). See, too, R v Ndhlovu (n329) for South African common law. For the same principle in Germany see *supra*.
332 See for example Rabie 1972 CILSA (n282) 261ff; Fuggle & Rabie (n282) 44ff.
333 See J Clarke `The Fate of the Nation´ Sunday Star Magazine 22 April 1990, p44.

prosecution[334]; the police are not adequately trained and equipped to deal with certain forms of pollution, where a great deal of expertise is required in order to investigate the case in an appropriate manner; prison sentences have hardly ever been passed, fines are too small and have virtually no adverse effect on companies; the effectiveness of criminal sanctions depends strongly on the values prevailing in the society, and pollution is in general still not considered to be morally wrong in this country; and finally, criminal sanctions only have a deterrent effect, if they are regarded as a deterrent, which is questionable because of the small sentences and inadequate enforcement mentioned above.[335]

3. Conclusions

The situation in South Africa could certainly be improved by introducing special police branches for environmental offences, as it has been done in Germany[336]; they would be able to provide better evidence for the prosecution and to raise the detection rate. The judges in South Africa as well as in Germany must change their attitude

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334 See n329 *supra*.
335 See Rabie (n283); Fuggle & Rabie (n282).
336 See n306 *supra*.

towards environmental crimes and be prepared to pass severe punishment upon polluters.[337]

It seems inevitable to increase sentences and penalties for environmental offences in South Africa. It is also of tremendous import to improve the possibility of calling the management to account for industrial pollution.

But, even if the efficiency of criminal environmental law can be raised considerably, it must be kept in mind that penal law can only be *ultima ratio* or `last resort´[338], and that other legal tools must be applied with priority.[339]

III PRIVATE LAW

Private law remedies against pollution had already been available long before pollution control legislation was introduced.[340] The complex system of pollution control law has only been developed in the last 100 years,

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337 See Breuer (n285) 2074.
338 See Meurer (n285) 2071.
339 See Breuer (n285) 2074.
340 See O Kimminich, H v Lersner & PC Storm (ed) `Handwörterbuch des Umweltrechts´ vol II (1988) p774f; MA Rabie `Legal remedies for environmental protection´ 1972 CILSA 254.

especially within the last few decades.[341] But private remedies have still not been rendered superfluous by administrative law.[342]

There are several advantages of administrative law in the field of pollution control [343], compared with private law. Public law can take preventative measures while private law remedies are only available when damage (to private rights) or has already occurred or is at least imminent.[344] Administrative law can act in the interest of the public, whereas only interests of individuals are protected by civil law[345]. And finally, public law can be enforced by the authority, while private remedies depend on citizens, who have *locus standi*; they must be

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341 See MA Rabie & JI Glazewski `The Evolution of Public Policy with Regard to the Environment´ IGBP Conference, UCT 1989, p8ff; M Middleton `The Development and Implementation of Environmental Legislation Pertaining to the Industrial and Commercial Exploitation of Environmental Elements Necessary to Sustain Human Life´ (1985) p15ff; JW Gerlach `Die Grundstrukturen des privaten Umweltrechts im Spannungsverhältnis zum öffentlichen Recht´ JZ 1988, 162ff; Kimminisch, v Lersner & Storm (n340) p775ff. See, too, MA Rabie `Administrative Law Reform and Environmental Law´ 1981 THRHR 46.

342 See RF Fuggle & MA Rabie `Environmental Concerns in South Africa´ (1983) p38f; Gerlach (n341) 161ff, 174ff; D Medicus `Zivilrecht und Umweltschutz´ JZ 1988, 785.

343 See Medicus (n342).

344 Gerlach (n341).

345 R Schmidt `Einführung in das Umweltrecht´ (2nd ed. 1989) p23; Medicus (n342).

prepared to initiate an action and to bear the costs in case of defeat.[348]

However, there is a crucial shortcoming of pollution control legislation. Its purpose has always been not only to limit and prevent pollution, but also to permit a certain degree of emission and therefore to allow the creation of hazards for man and environment.[347] This is the unsatisfactory side of administrative pollution control. Licences granted to emitters today still permit environmental hazards, even if the emphasis has been increasingly shifted towards environmental protection. Scientific and technological advance can reduce the risk of unintentional and unexpected effects, but those risks can never be eliminated completely.[348]

Private law remedies can help to reduce pollution, where administrative control has remained ineffective.[349] The

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346 See Gerlach (n341) 168f.
347 Gerlach (n341) 164. It seems surprising that this fact has hardly ever been mentioned before. The purpose of the first major pollution control act in Germany, the GewO (Industrial Code) of 1869, was primarily to 'unleash' industrial development by permitting industrial installations and therefore limiting the effectiveness of the *actio negatoria* as a private law remedy.
348 See Gerlach (n341) 164.
349 See Fuggle & Rabie (n342); Kloepfer at the 5th colloquy on environmental law in Trier, Germany, JZ 1989, 1114, Medicus (n342).

polluter-pays principle can be implemented by forcing the polluter to bear the costs of environmental damage.[350]

1. Injunction

a) Germany

From an environmental point of view, the injunction or interdict is of particular importance because it is designed to regulate future conduct and therefore to prevent damage occurring.[351]

The Roman law remedy of the *actio negatoria*, which used to form part of German common law[352], was replaced in Germany by the statutory provisions of the BGB (Civil Code) in 1900.[353] The most important provision of the BGB concerning pollution control is s1004 which provides for an injunction in case of interference with other people's property.[354] The major proviso is provided by

350 See Chapter CII *supra*.

351 MA Rabie 'Towards Assuring Administrative Furtherance of the Public Interest in Environmental Conservation' 1990 Stellenbosch Law Review 234 and n342. See, too, Gerlach (n341) 166f. .

352 See Preussisches Obertribunal (Supreme Court of Prussia) 23, 252 at 260 (plenary decision of the 7 June 1852); Gerlach (n341) 170.

353 'Bürgerliches Gesetzbuch' of the 18 August 1896 (RGBl p195).

354 s1004 BGB:
'(1) If property is impaired in any other way than by dispossessing, the owner may require the disturber to cease the interference. If a continuance of the injury is to be apprehended, the owner may apply for an injunction'.

s906 BGB, which requires the owner to tolerate an interference with his property, in so far as the interference is immaterial or inevitable, but customary according to the local customs for lands in such locality.[355]

The right to require abatement of a nuisance or to claim an injunction is therefore primarily linked to landownership under German law.[356] The right has been extended to lawful occupiers of real property (*eg* tenants) by s862 BGB and to holders of certain real estate rights (*eg* usufruct and servitude) by ss1027, 1065, 1090(2) BGB. In German case law the scope of s1004 BGB has been extended to all (personal) rights protected by s823 BGB, *eg* life and health, the so called `*quasi*

`(2) The claim is barred if the owner is bound to tolerate the interference´.

355 s906 BGB:
`(1)A land owner may not forbid the discharge of gases, vapours, odours, smoke,soot, heat, noise, vibrations and similar interferences emanating from another peace of land, in so far as the interference does not or does not substantially (`unwesentlich´) affect the use of his land.´
`(2) The same rule applies, if a substantial interference is caused by a use of the other land which is customary in the locality (`ortsüblich´) and cannot be prevented by economically justifiable measures. If the owner is to tolerate an unacceptable (`unzumutbar´) interference, he can claim compensation´.
`(3) Discharge by a special conduit is not permitted´.

356 See Gerlach (n341) 169f.

negatorischer Rechtsschutz', since it has been derived from the *actio negatoria*. As a result anybody affected by emissions is entitled to an injunction.[357]

German courts of law have always pointed out that compliance with pollution standards does not necessarily mean emissions are immaterial or tolerable in the private law relationship.[358] Violation of pollution control legislation is, on the other hand, *prima facie* evidence for an unacceptable degree of emissions.[358] Pollution control regulations are therefore not more than minimum requirements in the view of the civil courts. The burden of proving that an emission is lawful and the interference is tolerable is upon the emitter.[360] Doubts are therefore prejudicial to him.

The right to claim an injunction is, however, substantially restricted by several public law provisions. In many cases an injunction is barred by an

357 See RGZ 60, 6ff; Schmidt (n345); D Medicus in: `Münchener Kommentar' (n359) s1004 para 6; HJ Mertens *ibid* vol 3/2 (1986) s823 para 49ff.

358 See BGHZ 70, 102 at 105ff; see, too, BHGZ 92, 143 at 151f and 69, 105 at 114ff.

359 See FJ Säcker in `Münchener Kommentar' vol 4 (2nd ed 1986) s906 para 23ff; in his opinion, exceeding emission limits always leads to material interference.

360 RGZ 59, 74: 97, 291: 100, 75: 154, 165: BGHZ 48, 98: 60, 119; 72, 289; 85, 375 at 384; BGH JZ 1984, 1106 at 1107.

unappealable (`unanfechtbar´) permission for an installation in so far as demolition or shutdown of the installation is demanded[361]; the plaintiff is restricted only to demand emission control or protective measures.[362] If such measures are disproportionate the aggrieved person can only claim compensation; if they are insufficient the plaintiff may demand pecuniary compensation in addition to pollution control measures.[363]

Reason for the proviso is to protect the sponsors of projects, who rely on the conditions stated in the official notice of approval.[364] The curtailment of private law rights seems justifiable, since public participation in the administrative decision-making and extensive jurisdiction of administrative courts in licensing procedures are provided.[365] The legislator obviously wants to concentrate objections against emissions at an early stage. It is, however, essential that aggrieved individuals are entitled to require

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361 s14 BImSchG; s7(6) LuftVG (Aviation Act); s11 WHG; s17(6) FStrG (Federal Roads Act).
362 See Gerlach (n341) 167f; Säcker (n359) para 105. Even the right to claim protective measures is ruled out by s11 WHG; the plaintiff is only entitled to pecuniary compensation.
363 See s906(2)2 BGB; s14 BImSchG.
364 Gerlach (n341) 166ff.
365 Säcker (n359) para 11.

further pollution control measures in spite of a valid permit for the installation, if unforeseen effects are caused by emissions.[366]

All in all, ss1004, 906 BGB have proved to be an effective supplement to the pollution control legislation.[367] Anybody who is affected by emissions of an installation is entitled to an injunction. However, the necessity to prove a causal connection between a nuisance and the emissions of a specific installation may cause severe problems in case of diffuse pollution.[368] Another shortcoming of ss1004, 906 BGB is that an injunction cannot be required, if the nuisance is customary in the locality. This proviso had already been formulated by the courts of law before the BGB came into force in 1900; it formed part of German common law.[369] The positive effect is that emitting activities have been concentrated in certain industrial districts, while they can be more or less prevented from making their way into 'clean' areas.[370]

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366 See Gerlach (n341) 166ff, 174ff.
367 *Ibid.*
368 See Westermann at the 5th colloquy on environmental law (n349); Säcker (n341) para 6.
369 See Preussisches Obertribunal (n352).
370 See Gerlach (n341) 168. The executive can, of course, create new industrial regions by means of planning law. It must, however, take regard of the people living in the area already; otherwise a planning provision would be null and void, see

An injunction can also be claimed by means of ss823(1) and (2) BGB.[371] This provision entitles to compensation in case of violation of rights, including personal rights. Compensation can consist of pecuniary compensation or restitution in kind[372], *eg* the abatement of a nuisance.[373] The problem, however, is that s823 BGB is applicable in case of intention or negligence only - unlike ss1004 BGB.[374] The burden of proof for fault is on the plaintiff.[375]

Gerlach (n341) 173 and s1(6) BauGB (Building Law Act).

371 s823 BGB:
`(1) Anybody who, willfully or negligently, unlawfully injures the life, body, health, freedom, property or any other right of someone else is bound to compensate him for any damage arising therefrom´.
`(2) A person who infringes a statutory provision intended for the protection of others incurs the same obligation. If, according to the purview of the statute, infringement is possible even without any fault on the part of the wrongdoer, the duty to make compensation arises only if some fault can be imputed to him´.

372 s249 BGB:
`A person who is bound to make compensation shall bring about the condition which would exist if the circumstances making him liable to compensate had not occurred. If compensation is required to be made for injury to a person or damage to a thing, the creditor may demand, instead of restitution in kind, the amount of money necessary to affect such restitution´.

373 See Schmidt (n345) p22f; W Grunsky in `Münchener Kommentar´ vol 2 (2nd ed 1985) s249 para 1ff.

374 See *supra*.

375 Mertens (n357) para 48ff.

b) South Africa

The requirements which have to be met by the plaintiff in order to be entitled to an interdict are substantially different in South Africa.

First of all, the interdict is a subsidiary remedy which is only available, if there are no other adequate and effective remedies.[378] If an action for damages affords adequate protection, an interdict will be refused.[377] An action for damages is not a satisfactory remedy where irreparable damages are to be feared[378], for instance environmental damages. Other examples for the absence of alternative remedies are difficulties to assess or prove damages[378] or where the respondent is a man of straw.[380]

376 See Tvl Property and Investment Co Ltd and Reinhold & Co v SA Townships Mining and Finance Corp. Ltd and the Administrator 1938 TPD 512; Free State Gold Areas Ltd v Merriespruit (OFS) Gold Mining Co Ltd 1961 2 SA 505 (W) 518 at 524ff; LTC Harms in 'The Law of South Africa' vol 11 (1981) para 319.

377 See Buitendach & Others v West Rand Proprietary Mines Ltd & another 1925 TPD 886 at 906f; Mather v Unlaw &Others 1940 NPD 266 at 269.

378 See Witbank Colliery v Malan & another 1910 TPD 667 at 678.

379 See Transvaal Property & Investment Co Ltd & Reinhold & Co v SA Townships Mining & Finance Corporation & the Administrator 1938 TPD 512 at 521; Fourie v Uys 1957 (2) SA125 (C) at 128f; Town Council of Roodepoort - Maraisburg v Posse Property (Pty) Ltd 1932 WLD 78.

380 See Rabie (n340).

Furthermore, the applicant must first exhaust other remedies at his disposal.[381]

Rabie has criticised that the basis of an interdict aimed at prevention or termination of unlawful activities is violated by the subsidiariness. The *actio legis Aquiliae* may only become available when damages have already occurred. 'Why, it may be asked, must a victim of pollution be compelled to sit and wait for damage to ensue, and then only afterwards claim compensation? The motto "prevention is better than cure" is especially true in the environmental field'.[382]

An interdict can be based upon the infringement of real and personal rights, which may lead to damage, but also upon infringement of rights of personality.[383] Consequently, a person may claim an interdict against a polluting activity where his aesthetic feelings have been infringed through pollution or where they are threatened with infringement.[384] Under German law, the violation of aesthetic feeling cannot be prevented by means of an injunction.[385]

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381 See Shames v SAR & H 1922 AD 228.
382 Rabie (n340) 256.
383 See Fuggle & Rabie (n342) 39.
384 Rabie (n340) 255.
385 See RGZ 76, 130; BHGZ 51, 396; 54, 56 at 59; 95, 307.

In order to obtain an interdict, the applicant must prove that the respondent's conduct is wrongful[386], while under German law the respondent has the burden of proving lawfulness of an emission.[387] If a person uses his land in such a way that he causes unreasonable interference with his neighbour's right of use of his land, the action is unlawful and the latter entitled to an interdict.[388] Although a person may normally use his land as he pleases, the rights are curtailed by the rights of his neighbours.[389] This can be called `neighbour law' (`buurreg').[390]

An interdict will be refused if the respondent's conduct is justified by statutory authority. `Whatever controversy may attend the juridical nature of some defences, there is no doubt at all that statutory authority operates by negating wrongfulness, as indeed its other name - justification - implies.'[391]

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386 See Welkom Bottling Co (Pty) Ltd v Belfast Mineral Waters (OFS) (Pty) Ltd 1967 3 SA 45(O) at 56-57; JC van der Walt in `The Law of South Africa' vol 8 (1979) para 56.
387 See (n360).
388 See Regal v African Superslate (Pty) Ltd 1963 (1) SA 102 (A) at 111f.
389 Fuggle & Rabie (n342) 39.
390 See (n388). The German `Nachbarrecht' (neighbour law), codified in ss906ff BGB, contains similar principles, see Säcker (n359) para 1ff.
391 PQR Boberg `The Law of Delict' vol 1 (1984) p771.

The court will consider, whether the statute relied upon the authorisation of *some* interference with *private* rights. An interference with the common-law rights of the aggrieved person can expressly be justified. The statutory authority may also be deduced from the fact that the power conferred upon the emitter cannot be exercised without *some* infringement of private rights.[392] If the power has been exercised 'negligently', in other words, if the emitter has not minimized harm caused by his activity, his act will always be wrongful.[393]

c) Conclusions

The interdict cannot be an efficient tool for environmental protection in South Africa as long as it is only a subsidiary remedy and as long as the burden of proving illegality is on the plaintiff. It will in many

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392 Municipality v African Realty Trust Ltd. 1927 AD 163 and Prinsloo v Luipaardsvlei Estates & GM Co Ltd. 1933 WLD 6.

393 See Johannesburg Municipality v African Realty Trust Ltd (n392). See also Rainbow Chicken Farm (Pty) Ltd. v Mediterranean Wollen Mills (Pty) Ltd. 1963 (1) SA 201 (N),where the emission (sewage) did not conform to the standards laid down in the statute. The question, whether an emission permit justifies the polluting activity as long as the pollution standards are obeyed, has apparently not been considered yet.

cases be virtually impossible for the aggrieved person to produce evidence that an emission is unlawful.

In Germany it is highly advisable to introduce the possibility for an injunction if rights of personality are infringed since environmental degradation does not necessarily cause violation of real or personal rights.

2. Compensation

a) Germany

The German law of torts is based on several statutory provisions. The major provision is s823BGB[394], which entitles the plaintiff to compensation, if one of the listed (personal) rights has been infringed (subsect 1) or if a provision intended for the protection of the aggrieved person has been violated (subsect 2).[395] Both subsections of s823 BGB are only applicable, if some fault is found with the wrongdoer (s276 BGB). The burden of proving fault is upon the plaintiff.[396] The experience has been made that in cases of damage caused

394 See n371 *supra* for the text of the provision.
395 It is in many cases controversial as to whether environmental and pollution control legislation intends to protect the individual over and above the public in general and the environment, see Mertens (n357) para 158 and Medicus (n342) 783f.
396 See Mertens (n357) para 48ff.

by pollution, the plaintiff is very often unable to prove fault, because he knows neither the necessary scientific and technological facts, nor the data of the installation in question.[397]

The law courts, especially the BGH (Federal Supreme Court) have modified the *onus probandi* considerably in order to guarantee equal chances of the litigant parties; the emitter has the legal duty to maintain the safety of his installation (`Verkehrssicherungspflicht´) and the burden of proving compliance with this duty is upon him.[398] In practice this rule often may lead to a reversal of the burden of proof.[399]

Strict liability has been introduced in the fields of water pollution and nuclear energy.[400] It is believed that operating nuclear installations, dealing with radioactive substances and discharging into water are so dangerous that damages can occur even where the people responsible act carefully. The risk for damages arising without negligence shall be carried by the operator.[401]

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397 See Medicus (n342) 784.
398 BGHZ 92 143 at 147.
399 See Gerlach (n341) 170.
400 s22 WHG; ss25ff AtG.
401 See Mertens (n357) preliminary remarks before ss823 ff para 19ff, 22.

As from the 1st January 1991 the UmweltHG (Environmental Liability Act) has been in force which has implemented strict liability for damages caused by air and soil pollution. The act is applicable for all installations which are listed in annexure I of the act.[402] Strict liability is provided for all damages regardless whether they are caused by an accident ('Störfall') or as a result of normal and undisturbed operation. The latter alternative is of much greater importance since damages are often due the cumulative long-range effect pollutants which have been emitted legally and without negligence.[403]

s6 UmweltHG provides for a presumption of a causal relationship between emission and damage. Proving causality has in fact been the major problem of most damage claims.[404] It is not only a problem to produce evidence that harm was caused by a specific pollutant; it is also difficult to prove which emitter of the substance is in fact responsible for the effects. Even if the increase of cases a disease (*eg* cancer or respiratory

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402 96 scheduled processes have been listed in annexure I to the UmweltHG, *eg* power stations with an output of more than 50 MW, concreteworks and waste disposal sites

403 See E Rehbinder at the congress on environmental law in Berlin, NJW 1989, 1078f

404 Medicus (n342) 784.

deseases) can be proved statistically, the problem remains to furnish evidence that the plaintiff's illness would not have occurred without the emission.[405] The courts tried to help the injured person by introducing *prima facie* evidence for causality if an emitter had not complied with pollution standards.[406] But even transgression of emission limits was often difficult to prove because there cannot be perfect supervision.

According to s6 (2) UmweltHG a presumption of causality is inapplicable if the emitter can prove that he has complied with all pollution standards and other duties and if the damage due to an accident.

s8 (1) UmweltHG provides for the duty of the emitter to produce data and information about the installation and its emissions to any aggrieved person. If there is reasonable doubt about the correctness of the information the injured person has the right to inspect business records according to s8 (3) UmweltHG.

Liability under the UmweltHG is limited to DM 160 mil (about R 270 mil) (s15 UmweltHG). If the emission has

405 *Ibid*
406 BGHZ 92, 143 at 147 ff. The court has even considered to shift the burden of proving causality on the emitter.

caused environmental degradation or damage to the landscape restitution in kind can be demanded, even if the funds for restoration will exceed the real value of the damage objects (*eg* a forest or a lake) by far (s16 (1) UmweltHG in contradiction to s251 (2) BGB). According s19 UmweltHG liability insurance is compulsory for all installations listed in annexure I. No compensation can be demanded for an act of God ('höhere Gewalt') (s4 UmweltHG).

The UmweltHG has raised the efficiency of private law against environmental degradation tremendously.[407] One of the goals of the new act is to force all emitters to apply strictest pollution control measures.[408] Any person aggrieved by pollution has now a genuine chance of winning an action for damage.[408]

Compensation without fault upon the disturber is also provided by s906(2)2 BGB, s14 BImSchG, s7(6) AtG and s11 LuftVG (Aviation Act) in case of a nuisance which is to

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407 See J Schmidt-Salzer 'Umwelthaftflicht und Umwelthaftflichtversicherung (III): das Umwelthaftungsgesetz 1991' VersR 1991, 17f. See, too, H Weber & C Weber 'Der Gesetzentwurf der Bundesregierung zum Umwelthaftungsgesetz' VersR 1990, 688f.

408 See for instance the grounds for a bill by the state government of North Rhine-Westphalia, BR-Dr 217/87.

409 See Schmidt-Salzer (n407f).

be tolerated, because the disturbing activity is customary in the locality.[410] These provisions apply for landowners, lawful occupiers of real property and holders of certain real estate rights only.[411]

b) South Africa

In South Africa, the delictual remedy providing compensation for the infringement of interests of substance is the *actio legis Aquiliae* or Aquilian action.[412] In order to be entitled to compensation, the injurious act must have been wrongful[413] and some fault (*mens rea*) must have been on the defendant.[414] Since polluters will normally not cause damages intentionally, the question in practice is whether the wrongdoer acted negligently.[415] The burden of proving *mens rea* is

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410 See subchapter (1) *supra*.
411 The BGH has refused to apply the provision *mutatis mutandi* to other people affected by emissions.
412 See for instance Wynberg Municipality v Dreyer 1920 AD 439 (air and water pollution); Turkstra Ltd v Richards 1926 TPD 276; Gibbons v SAR & H 1933 CPD 521 (both air pollution); Van der Merwe v Carnarvon Municipality 1948 (3) SA 613 (C) (land and water pollution); Moller v SAR & H 1969 (3) SA 374 (N) (water pollution).
413 See Cape Town Municipality v Paine 1923 AD 207 at 229; Donoghue v Stevenson (1932) AC 562 (HL) (SC) at 579.
414 See Boberg (n391) p268ff.
415 The criterias of liability for negligence have been restated in in Krüger v Coetzee 1966 (2) SA 428 (A).

usually on the plaintiff[416], but in cases of `nuisance´ it has been held that the defendant has to prove absence of fault.[417]

In the field of nuclear energy, strict liability has been introduced by the Nuclear Energy Act 92 of 1982[418] just as in Germany.

Compensation for the infringement of interests of personality, such as aesthetic feelings, is only provided by the *actio iniuriarum*.[419] This action, however, requires *dolus* (intention).[420]

c) Conclusions

As in Germany the main difficulty with delictual remedies in South Africa, is the proof of a causal relationship

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416 See Boberg (n391) p377f; Arthur v Bezuidenhout and Mieny 1962 (2) SA 566 (A).
417 See Bloemfontein Town Council v Richter 1938 AD 195.
418 s41.
419 See Matthews & others v Young 1922 AD 492 at 503.
420 See Union Government (Minister of Railways and Harbours) v Warneke 1911 AD 657 at 670. In Germany s253 BGB provides: `For an incorporeal injury pecuniary compensation may only be demanded in the cases specified by law´. The law courts have applied s847 BGB (compensation for pain and suffering) *mutatis mutandi* to infringement of rights of personality (`allgemeines Persönlichkeitsrecht´); see BHGZ 26, 349; 35, 363; 39, 124; NJW 1982, 635: see also BVerfGE 34,269.

between the emissions of a certain installation and the damage caused.[421] The result is that delictual remedies in South Africa have remarkable limitations, as was the case in Germany before the enactment of the UmweltHG.[422]

The question is whether the enactment of legislation similar to the UmweltHG can be recommended to South Africa. It has to be considered that the introduction of strict liability for environmental damages in conjunction with a presumption of causality will lead to significant expenditures for industrial polluters,[423] even if such legislation is only applicable for major installations. ESCOM, the oil industry and the mining sector in particular would have to prepare for large damage claims. It is uncertain whether the South African economy which is already in deep recession could cope with a further financial burden. Yet it must be taken into account that certain industries that certain industries in this country, like the electrical power sector, have externalised costs to a large degree by polluting the environment extensively.[424] It is paradoxical that the

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421 See Fuggle & Rabie (n342) p41.
422 *Ibid* and Medicus (n342) 785.
423 See Schmidt-Salzer (n407) 9, 17.
424 See for instance PD Tyson, FG Kruger & CW Louw 'Atmospheric pollution and its implication in the Eastern Transvaal Highveld' (1988) SA National Scientific Programmes Report no 150.

first-world sector in South Africa produces the highest per capita emissions of SO_2 and CO_2 in the world mainly through the generation of power,[425] while electricity is far cheaper than *eg* in Germany and while ESCOM encourages further energy consumption in national advertising campaigns.

It seems inevitable to redistribute the costs of pollution in South Africa by shifting the financial burden onto the polluter.[426] Legislation providing for efficient civil liability for major industrial polluters would be an effective way of doing so.

It has been suggested in Germany to introduce a compensation fund for damages, that cannot be attributed to a particular emitter.[427] Any possible polluter would have to make contributions to the fund. Funds have already been introduced in the field of pollution control in several countries. Well-known is the co-called 'Superfund' which has been initiated in the United States by the Comprehensive Environmental Response, Compensation

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425 *Cf* OECD 'Environmental Data - Donnèes OCDE Sur L'Environment, Compendium 1989' p17ff and Tyson, Kruger & Louw (n424).

426 See chapter IV 1 *infra*.

427 See RH Ganten 'Law on Liability for Environmental Damage ... ' EPL 18/3 (1988) p85f.

and Liability Act of 1980 (CERCLA).[428] The various funds have considerably differing goals: compensation (Japan, the Netherlands and Canada), cleaning-up measures (U.S.A. and Austria), protective measures against aviation noise (France) or investment in environmental protection (the Netherlands, France and Austria). The funds are financed by charges on certain products (U.S.A., the Netherlands and Japan) or certain activities (Japan, France and the Netherlands).[428]

A compensation fund for wide-spread environmental damages (*eg* forest mortality), as the one which is under consideration in Germany, has as yet not been introduced in any country. Not even the Dutch compensation fund for damages due to air pollution is constituted for cases of diffuse pollution.[430]

Several problems are still unsolved, for instance: What degree of damage is necessary in order to obtain compensation? How can the contribution be levied in a pollution related manner? And how can an incentive be given to reduce emission of harmful substances?[431] The

428 42 U.S.C.A. s9601ff.
429 Umweltbundesamt 'Berichte 2/90 (Neuere Tendenzen des Umweltrechts im internationalen Vergleich)' p273f.
430 *Ibid*, 274.
431 Ganten (n427) p85f.

potential positive effect of environmental funds, however, justifies further research.[432]

IV FINANCIAL INCENTIVES

1. Negative incentives

Economists have been pointing out for a long time that environmental, especially industrial pollution is a result of external diseconomy.[433] As long as an emitter can use and pollute environmental resources, like air, soil and water, free of charge, the costs and consequences of damage to those resources have to be borne by people not responsible for the pollution.[434] Industrialists will refrain from introducing non-obligatory pollution control measures, since an increase of production costs would be the result.[435] Producers would place themselves at a disadvantage should they undertake costly pollution control measures, while competitors continue to pollute freely.[436] A reduction of pollution can be enforced by pollution standards, but

432 Umweltbundesamt (n429) p274.
433 See for instance KH Hansmeyer `Cost Apportionment Principles in Environmental Protection´ in `Trends in Environmental Policy and Law´ (1980) p51f. *Cf* MA Rabie `Legal remedies for environmental protection´ 1972 CILSA 250f.
434 Rabie (n433) p251.
435 *Ibid.*
436 *Ibid.*

no incentive is given by standards to *develop* new pollution control measures.[437]

Environmental pollution can also be explained as a state of scarcity: there is not enough clean air, water, soil, *etc* available for the multitude of environmental users.[438] A new order of distribution for the scarce ecological assets must be introduced.[439] In a free economy, market mechanisms are the normal method of distribution.[440] Thus it is necessary to fix a market value of environmental resources.[441]

The existence of negative external effects does not only lead to undue use of natural resources and therefore environmental degradation; it also causes an increasing trend away from the economic optimum.[442] The annual environmental damages in the Federal Republic of Germany in 1981 were estimated to amount to DM 100 billion (ca

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437 D Murswiek `Freiheit und Freiwilligkeit im Umweltrecht´ JZ 1988, 990; S de Kock `Government Financial Incentives for the Protection of the Environment´ in `Trends in Environmental Policy and Law´ (1980) p64; Rabie (n433) 253.
438 Hansmeyer (n433) 51.
439 Murswiek (n437) 991ff.
440 See D Miltz `Financial Considerations of South African Environmental Problems´ (1984) 57ff.
441 Murswiek (n437) 991.
442 Hansmeyer (n433) 52.

R170 billion), 13 times the annual profit of all German stock companies together at that time.[443]

Several ways of introducing the polluter-pays principle have been discussed. The most common one is called emission or discharge fee (`Emissionsabgabe´) or environmental tax (`Umweltsteuer´)[444]; it is now as essential in Germany.[445] The costs of pollution are truly internalized by a fee proportional to the extent of pollution damage.[446] One example is a uniform fee, which is to be paid for each unit of a pollutant.[447]

A different approach is provided by the model of marketable permits[448] or emission certificates (`Umweltzertifikate´).[449] Every emitter had to buy such

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443 See Murswiek (n437) 992.
444 See D Miltz `Economic Aspects of Targeting Environmental Policy´ (1987) p41ff, 59ff, 71ff; Miltz (n440) 105ff.
445 See Murswiek (n437) 991 ff; KH Hansmeyer `Polluter Pays v Public Responsibility´ EPL 6 (1980) 24; Hansmeyer (n433) 53f; R Schmidt `Einführung in das Umweltrecht´ (2nd ed 1989) p18f.
446 See Hansmeyer (n433) 53.
447 See Miltz (n440) p105.
448 See Miltz (n444) p33ff; TH Tietenberg `Transferable Discharge Permits and the Control of Air Pollution: A Survey and Synthesis´ ZfU 1980, 477ff.
449 Murswiek (n437) 990; A Blankenagel `Umweltzertifikate - Die rechtliche Problematik´ in EM Wenz, O Issing & H Hofmann `Ökologie, Ökonomie und Recht´ 1987 p71ff; KR Kabelitz `Nutzungslizenzen als Instrument der Umweltpolitik´ ZfU 1983, 153ff; G Becker-Neetz ´Rechtliche Probleme der

a certificate, which would allow him to emit a specified amount of a pollutant. After a certain period, the certificate would be devaluated, in other words, the emissions had to be reduced.[450] The attraction of this system is the transferability of the certificates.[451] Since the emission certificates would be scarce, they could be sold at a high price.[452] There would be a strong incentive for polluters to reduce emissions and to sell their certificates. New companies would try to avoid emissions from the beginning in order to save the purchase price.[453] The executive could determine the total amount of emissions by selling only a limited number of certificates.

Some objections against emission fees have been put forward. First of all it has been held that this system would create a licence for pollution.[454] However, emissions have always been permitted by means of granting licences for polluting activities.[455] In order to prevent excessive pollution a maximum level of emissions

Umweltzertifikatsmodelle in der Luftreinhaltepolitik' (1988) p5ff.

450 Murswiek (n437) 990.

451 *Ibid.*

452 *Ibid.*

453 *Ibid.*

454 See Miltz (n440) p68.

455 See J W Gerlach `Die Grundstrukturen des privaten Umweltrechts im Spannungsverhältnis zum öffentlichen Recht' JZ 1988, 164.

could be prescribed by pollution standards in addition to emission fees.[456]

Another objection is that the polluting industry would pass the fees onto the consumer by raising prices.[457] However, market forces will create a permanent incentive to offer products at a relatively low price in order to increase the share of the market. To achieve this goal, the producer will try to detect and implement the least expensive abatement policy.[458]

The most serious criticism is the one expressed by the British Royal Commission on Environmental Pollution which concluded that

> `... it would not be in the public interest to allow a fixed resource (i.e. the assimilative capacity of a water body) to be allocated solely according to the ability-to-pay. It might lead to ... one kind of industry being put out of business by another because their waste effluent contained the same chargeable ingredient but their financial margins were entirely different'.[459]

However, this is not a specific problem of emission charges; industries with high profit margins would be

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456 See De Kock (n437) 67.
457 *Ibid.*
458 De Kock (n437) 64.
459 E Ashby `Pollution in Some British Estuaries and Coastal Waters: Third Report of the Royal Commission of Environmental Pollution' (1972) p68.

able to cope with strict emission standards, while other sectors of the economy, which already suffer losses, might not survive the obligation of introducing pollution control measures. This would, in fact, show that a producer was only able to meet competition in the past by externalising the costs of pollution, in other words, by shifting them on to the public.[460]

An additional advantage of pollution charges is that funds are thereby collected, which can be used for environmental purposes.[461] Those funds could, for instance, compensate for damages, which cannot be related to particular polluters[462], or collective abatement initiatives could be financed by them.[463]

It will clearly be difficult to find the right assessment basis.[464] An optimum pollution fee would be proportional to the damage caused by the pollutant.[465] Since it is very difficult or even impossible to estimate environmental damage, charges will have to be based on more indirect indicators, *eg* the amount of emission.[466]

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460 This in fact nothing else but a form of subsidy, see Murswiek (n437) 992 (n61).
461 *Ibid.*
462 See n433 *supra.*
463 De Kock (n437) 64.
464 See Miltz (n440) 109.
465 De Kock (n437) 64.
466 Hansmeyer (n433) 53.

It is important to introduce effective incentives for pollution control without inducing unreasonable measures, which would harm the national economy.[467]

According to an American study, the costs of abating water pollution in the United States up to 85-90% would amount to $61 billion. A further purification of up to 95-99% would cost an additional $58 billion. Total purification would cost an extra $198 billion.[468] It would be inefficient to abate the residual pollution as far as the abatement costs would exceed the damage. As a consequence the economy would suffer a loss.[469] Money necessary for those measures would better be invested in the reduction of other, more damaging forms of pollution.

Even though a complex assessment system is necessary to give the right incentives, emission fees seem to be superior to any other method of pollution control.[470] Their advantage is to bring market mechanisms into action.[471] A disadvantage can be seen in the fact pollution charges cause reductions of pollution only indirectly by creating financial incentives to do so; for

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467 De Kock (n437) 62f.
468 *Ibid.*
469 *Ibid.*
470 De Kock (n437) 77.
471 Miltz (n440) 54ff.

this reason their success depends on reasonable decisions made by polluters. In contrast lower emission levels are enforced directly and therefore more quickly by pollution standards.[472]

Another merit of pollution charges is that they regulate free enterprise far less than emission standards.[473] It is the industrialist who has the final say. He can, for instance, decide to operate an old installation for some more time without additional pollution control before putting it out of operation. Or he can equip his main plant with the most sophisticated emission control techniques, but rather pay some additional pollution charges for minor installations.[474]

Until now only a few emission charges have been introduced in Germany. Major example is the sewage charge (`Abwasserabgabe´). According to the AbwAG (Sewage Charges Act) a fee of DM40 (ca R70) is to be paid for each unit of a certain pollutant; 20mg of mercury, 500g of lead or 50kg of oxidants, for instance, form one discharge unit.

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472 See G Hartkopf & E Bohne 'Umweltpolitik' vol 1 (1983) p250 ff.
473 See Murswiek (n437) 991.
474 *Ibid.*

Landing fees based on the noise level of aircraft provide another example of pollution charges. According to s12 FluglärmG (Aviation Noise Act), airport companies are obliged to pay the costs of noise protection measures, as far as the noise in the vicinity of an airport exceeds a certain level. The costs are passed onto the airlines and aircraft owners by means of a graduated landing fee scheme.[475]

Charges for waste disposal are not based on pollution or damage. They are simply intended to cover the expenses of waste collection and treatment; thus they cannot be called pollution fees.[476]

To date emission fees have only been introduced in a fragmentary way.[477] However, in Germany plans to create a comprehensive scheme of pollution fees in addition to emission standards are under way. There is, for instance, the intention to base the motor vehicle tax on the emissions of a vehicle;[478] until now the tax is based on the engine capacity. The Federal Minister of the Environment is planning to impose a fee on all packing

475 *Cf* De Kock (n437) 66.
476 *Iibid*
477 See Schmidt (n445) 18.
478 M Grüner 'Die Abfallwirtschaftspolitik der Bundesregierung' Umwelt 6/1990, 275f.

material in order to prevent excessive packaging of merchandise.[478] In addition, every shop shall be obliged to take packing material back.[480] A charge on pesticides and fertilizers could redistribute the costs of purification of ground water, which has been contaminated by those chemicals.[481] Under consideration is also a fee on carbon dioxide (CO_2) emissions in order to reduce consumption of fossil fuels.[482]

In South Africa, until now no emission fees have been employed on a national level.[483] But in this country too, the advantages of pollution charges have been recognised.[484] Some municipalities have already introduced discharge fees on sewage.

2. Positive incentives

Another way of promoting pollution control measures is by means of financial support in the form of direct subsidies, tax concessions (tax reductions or accelerated

479 See BT-Dr VI/2710 p31.
480 *Cf* BA Szelinski und H Schnurer 'The New Waste Avoidance and Waste Management Act' in: Federal Enviromental Agency (n443) p89.
481 See Rat von Sachverständigen für Umweltfragen 'Sondergutachten "Umweltprobleme der Landwirtschaft"' (1985) p362 ff.
482 Umweltbundesamt (n478).
483 *Cf* Miltz (n440) 1f.
484 Rabie (n433).

depreciation allowances) or low interest loans.[485] It is obvious that positive incentives are not compatible with the polluter-pays principle if the subsidies were borne by the community.[488] However, positive incentives for emission control have often been employed.[487]

Positive financial incentives are suitable for removing losses, producers are suffering because of the introduction of non-obligatory pollution control measures.[488] But there are various shortcomings compared with emission charges. An important disadvantage is that subsidies may encourage entry into the industry. Although a subsidy will probably cause a reduction of a firm's emissions, the emissions of the industry as a whole may increase even beyond the previous level.[489] Subsidies also tend to favour industries which produce more emissions, because a clean-up of their pollution will be more expensive. Activities are thus promoted which should actually be eliminated or at least reduced. Moreover, there will always be the risk that polluters may adopt processes that generate more pollution in order to qualify for (larger) subsidy payments.[490] Above all,

485 De Kock (n437) 69.
486 Hansmeyer (n433) 54f.
487 De Kock (n437) 69.
488 See (n435) ff *supra*.
489 De Kock (n437) 70.
490 See Rabie (n433) 252.

positive incentives are an additional financial burden on the taxpayer who is not responsible for the emissions.[491]

Positive incentives can be justifiable if they are of temporary nature, designed to allow the industry to catch up with past neglect of the environment. The detrimental consequences of temporary subsidies are limited.[492]

In Germany, for instance, tax reductions were introduced for motor vehicles equipped with catalytic converters, because the European Community had vetoed the immediate implementation of strict pollution standards. These tax concessions were intended to promote the marketability of 'clean' vehicles for a transitional period, before catalytic converters became compulsory for new motor cars. The tax reductions were not even incompatible with the polluter-pays principle, because they were financed by tax increases for motor cars which exceeded certain emission limits.

German tax legislation provides for many opportunities for accelerated depreciation in the field of pollution control[493], *eg* for small furnaces in dwelling houses.

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491 De Kock (n437) 69.
492 De Kock (n437) 76.
493 See s7d EStG (Income Tax Act).

Social aspects are often the reason for the implementation of positive incentives.[494] However, it should again be pointed out that subsidy programmes are in general not effective as means of controlling pollution.[495]

In South Africa, no financial incentives have been introduced to promote emission control, not even in the form of tax concessions.[496] There are certain provisions in the Income Tax Act 58 of 1962, which directly affect environmental protection, by providing for allowances of deductions in respect of certain farming activities relevant to conservation (*eg* eradication of noxious plants and prevention of soil erosion)[497] or for exemptions from donation tax.[498]

3. Conclusions

In this chapter, a theoretical review has been given of the advantages and disadvantages of financial incentives in the field of pollution control. The conclusion to be drawn is that a system of emission fees is by far

494 See Hansmeyer (n433) 54f.
495 De Kock (n437) 69; Rabie (n433) 251f.
496 See Miltz (n440) 68ff.
497 Schedule 1 para 12(1)(a) and (b); s17A.
498 s56(1)(h) in conjunction with s10(1)(cB).

superior to positive economic incentives. Even though pollution charges have several merits compared with pollution standards, a combination of both systems seems to be preferable which leaves the industrialists as much freedom of action as possible, but rules out the possibility of excessive emissions at the same time.[488] Such a combined system would also eliminate certain disadvantages of indirect measures (financial incentives) compared with pollution standards.[500]

Marketable permits or emission certificates cannot be regarded as an advisable procedure for environmental protection.[501] The positive effect of emission certificates depends largely on the devaluation rate; this rate would be fixed by an administrative body in the same way as pollution standards to date.[502] The main disadvantage, however, is the fact that marketable permits would require new complicated administrative structures; these would create new bureaucracy[503] instead of simplifying the current system.[504]

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499 Umweltbundesamt (n478) p30. See also M Kloepfer 'Umweltrecht' (1989) p160f.
500 Hartkopf & Bohne (n472) p253.
501 Becker-Neetz (n449) p298ff; Hartkopf & Bohne (n472) p244f.
502 Becker-Neetz (n449) p299.
503 Hartkopf & Bohne (n472) p245; Becker-Neetz (n449) p298.
504 This is one of the goals of financial incentives, see Kloepfer (n499) p161.

V CONSTITUTIONAL LAW

During the last few years the question has been discussed in detail, to what extent and in what respect the constitution can play a part in the protection of the environment.[505] Two distinctly different approaches have been suggested: One is the introduction of a fundamental human right to a decent environment, which is enforceable by the individual, the other a mere legislative objective (`Staatszielbestimmung´) or the declaration of a legal principle of environmental protection.[506]

1. Environmental protection by means of a human right

The German bill of rights (`Grundrechtekatalog´) consists of a number of fundamental rights. The most important ones are the guarantee of life and physical inviolability

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505 See, for instance, PD Glavovic `Human rights and environmental law: the case for a conservation bill of rights´ 1988 CILSA 52ff; DV Cowen `Toward distinctive principles of South African environmental law: some jurisprudential perspectives and a role for legislation´ 1989 THRHR 3ff; R Stober `Umweltschutzprinzip und Umweltgrundrecht´ JZ 1988, 426ff; H Hoffmann `Natur and Naturschutz im Spiegel des Verfassungsrechts´ JZ 1988, 265ff; N Müller-Bromley ´Staatszielbestimmung Umweltschutz im Grundgesetz´ (1990) p33.

506 See Cowen (n505) 23ff; M Kloepfer ´Umweltrecht´ (1989) p47

(art 2 (2) GG), the freedom of faith and religion (art 4 GG), the freedom of speech (art 5 GG), the freedom of association (art 9 GG), the freedom of movement (art 11 GG), the right to freely choose a profession (art 12 GG), the guarantee of property (art 14 GG), guaranteed access to the courts (art 19 (4) GG), the right to vote (art 20 (2) GG) and the guarantee of equality before the law (art 3 GG). In addition to these specific fundamental rights, a universal right of liberty is provided by art 2 (1) GG.

There are demands to fit the guarantee of a decent environment into the bill of rights.[507] A decent environment is regarded to be so essential for human well-being that it should enjoy the highest possible degree of legal protection.[508]

There are many objections against the introduction of such a fundamental right.[509] In contrast to the objects of the `classic´ human rights, the term `environment´ is indefinite and subject to wide interpretation. The environment cannot be protected absolutely, because almost every human activity has some environmental impact. The difficulty of devising suitable limiting

507 See Stober (n505) 430; Glavovic (n505) 75.
508 See Glavovic (n505) 59ff.
509 See Stober (n505) 428, 430.

clauses, which is even a problem with conventional human rights, is aggravated in the case of a right to an adequate environment.[510]

The most important objection against environmental protection by means of a fundamental right is that human rights were designed to protect the individual against state interference. Environmental degradation is to a large degree not due to state activities; on the contrary, protection of the environment depends on state intervention. The fundamental decisions which measures are to be taken to protect the environment, must be made by parliament, not by the judiciary.[511] The courts are not in a better position than the legislature to determine the necessary steps.[512]

The minimum ecological requirements ('ecological subsistence level') in Germany are protected by means of art 2 (2) GG in conjunction without article 1 GG (protection of human dignity). If the State does not take *any* action against environmental degradation, it can be forced to do so by the courts.[513] In exceptional

510 See Cowen (n505) 24.
511 M Kloepfer 'Zur Rechtsfortbildung durch Umweltschutz' (1990) p42.
512 See R Schmidt 'Einführung in das Umweltrecht' (2nd ed 1989) p26ff.
513 See Stober (n505) 430.

cases even the legislature can be forced by the BVerfG (Federal Constitutional Court) to take action.[514]

2. Environmental protection by means of a legislative objective

Several of the German constitutional states (`Länder´) have already inserted legislative objectives (`Staatszielbestimmungen´) into their state constitutions that the environment has to be protected.[515] The Federal Government is planning to introduce the following provision:

> Art 20a (1) GG:
> ´The natural basis for human existence (`natürliche Lebensgrundlage´) is protected by the State´.[516]

Many objections against such a legislative objective have been raised, for instance, that environmental problems would have to be solved by means of politics, because of the necessary compromises which have to be made. The

514 M Kloepfer ´Umweltrecht´ (1989) p43. *Cf* BVerfGE 65, 54 at 73ff.
515 Art 86 of the constitution of Baden-Würtemberg; art 3 (2) and 141 of the Bavarian constitution; art 11a and 12 of the Constitution of Bremen; art 62 of the Hessian constitution; art 29a (1) of the North Rhine-Westphalian Constitution; art 40 (3) of the constitution of Rhineland-Palatinate.
516 BT-Dr 11/885.

constitution should not be diluted by political statements.[517]

Many authors stress that environmental protection is likely to be improved by such a legislative objective; the courts would be in a better position to regard environmental factors as overriding other concerns.[518] In addition a fresh impetus could be given to environmental protection by a goal stated in the constitution.[519]

In South Africa it was planned to insert a legal principle of environmental protection into the Environment Conservation Act.[520] It is advisable to insert such a principle into the constitution instead of other legislation. This will underline the importance of environmental protection in the view of the legislator.

3. Conclusions

The effects of a legislative objective concerning environmental protection should not be overestimated.[521]

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517 See Stober (n505) 428.
518 Schmidt (n512) 26f; see also Cowen (n505) 24ff.
519 Kloepfer (n514) p48.
520 Clause 2 (1) (a) of the 1987 draft bill.
521 *Cf* Müller-Bromley (n505) p187ff.

Success of environmental law depends far more on the attitude of parliament, the administration and public awareness than on well intended principles or statements. Yet a legislative objective could have some positive results; it would lend the environment more importance in decision-making procedures[522] an would allow the judiciary to prefer environmental considerations.[523]

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522 Kloepfer (n511).
523 Kloepfer (n514).

E. FINAL CONCLUSIONS

This comparative analysis has shown that many efforts have been made in South Africa to develop environmental legislation. Nevertheless there are still various crucial shortcomings in South African environmental law which have to be overcome in order to ensure protection of the environment.

The problem of a comparative review of German and South African law is the differing social, economic and political situation. As a country with a large third-world sector, South Africa faces problems typical for developing countries: a rapidly increasing population which is drifting towards the cities[524]; difficulties caused by mass urbanisation , like access to drinking-water and waste-disposal; insufficient education and large-scale unemployment; soil erosion and desert encroachment due to overgrazing.[525] It is evident that South Africa must set other priorities than Germany ass one of the richest most industrialised countries.

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524 See B Huntley, R Siegfried and C Sunter 'South African Environments into the 21st Century' (1989) p47ff.

525 *Ibid* p36ff.

A comparison between the two legal systems is nevertheless appropriate and useful: South Africa compared to the majority of developing countries is relatively wealthy, economically powerful, has a good infrastructure and faces in and around the cities and industrial centres a similar pollution crisis as the so-called First World. South Africa has often been called Africa´s powerhouse. Unlike most countries on the continent it has the economic and scientific potential for managing pollution successfully.

I MAIN DIFFERENCES BETWEEN GERMAN AND SOUTH AFRICAN LAW

Principles (chapter C)

1. A principle of prevention which aims at minimising pollution regardless of its actual hazard has as yet not been recognised in South Africa. In this country the implementation of pollution control measures depends in general on the result of a cost-benefit analysis.[528] In many cases action has not been taken because it was believed to be too costly; one example is provided by the ESCOM power stations which still operate without desulphurization equipment, in spite of extremely high sulphurdioxide emissions.[527]

Administrative procedures (chapter D I)

2. The executive in South Africa has on all levels a far wider scope of discretion than its counterpart in Germany. In Germany all material questions are to be decided in parliament; power to issue regulations may only be delegated by the legislature if content, purpose and scope of the authorisation is set forth in the

526 See n38ff, 64.
527 See n39.

parliamentary act.[528] In South Africa there are virtually no limits to granting discretionary power.[529]

3. In Germany a single cabinet minister does not have the right to veto actions of other ministers as is the position in South Africa. In case of a disagreement between ministers the cabinet as a whole decides by means of a majority vote.[530]

4. The existing legislation in South Africa does not oblige the executive to take comments into account. No provisions have been made for public participation in licensing procedures.[531] In Germany activities which might cause significant environmental impact may not be permitted without public participation; the courts may examine whether objections have adequately been considered.[532]

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528 See art 80 (1) GG (German Constitution).
529 See for instance s10 (4), (3) Atmospheric Pollution Prevention Act 45 of 1965 (licensing procedure); s2 Environment Conservation Act 73 Of 1989 (determination of general policy).
530 art 65 GG.
531 See n130.
532 See for instance s10 (6), (7) BImSchG (Federal Imission Control Act); ss8ff, 16 (1) para 5 AtVfV (Regulation on License Procedures for Nuclear Installation).

5. In South Africa environmental impact assessments are required for activities identified by the Minister of Environment Affairs in concurrence with other ministers concerned.[533] In Germany EIAs are mandatory for all installations and activities listed in annexure I of the EC-EIA and the UVPG (Environmental Impact Assessment Act).[534]

Judicial control of administrative actions
(chapter D 4)

6. Judicial control of administrative actions is restricted by the requirement of *locus standi*. While German courts have widely recognised statutory rights,[535] public-law rights have only been accepted in exceptional cases in South Africa.[536]

7. Administrative courts in Germany have a wide review power and will always reconsider the merits of a case.[537] In South Africa the appeal is an exceptional remedy and no provision for appeal to the law courts has been made in the field of environmental law.[538] The common-law

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533 See ss21, 22 Environment Conservation Act 73 of 1989.
534 See art 4 EC-EIA.
535 See n201.
536 See n229.
537 See n210ff.
538 See n268f.

remedy of judicial review is confined to procedural irregularities and illegalities and not at the legal or factual correctness of the decision.[538]

8. The German administrative courts follow the 'inquisitorial procedure'; they investigate the truth without being bound by the pleadings and evidence provided by the parties.[540] In South Africa, the executive is normally not compelled to provide data or informations, *eg* about emission levels.[541]

Criminal law (chapter D II)

9. Penalties for environmental offences are light in South Africa;[542] polluters in Germany are liable to fines many times higher than in South Africa.[543]

10. Unlike South Africa, there are special police units, specialised public prosecutors and in some cases special court divisions for environmental offences in Germany.[544]

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539 See n264.
540 See n281.
541 See n279.
542 See n319.
543 See n298 and n322f.
544 See n306.

Private law (chapter D III)

11. The interdict is a subsidiary remedy under South African law, the burden of proving illegality of an emission is on the plaintiff.[545] In Germany the converse applies.[546]

12. In South Africa the interdict can be based upon the infringement of rights of personality, while the injunction in Germany requires an alleged violation of a real or personal right.[547]

Financial incentives (chapter D IV)

13. In Germany some pollution fees have been introduce;[548] plans for a comprehensive scheme of emission charges are on the way and have in some cases already entered the legislative procedure.[549] Many opportunities for accelerated depreciation for pollution control measure are provided for by the German tax law.[550] In South Africa virtually no financial

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545 See n386.
546 See n387.
547 See n383ff.
548 See for instance the AbwAG (Sewage Charges Act).
549 See n478ff.
550 See n493.

incentives exist to date to encourage emission control and waste avoidance.[551]

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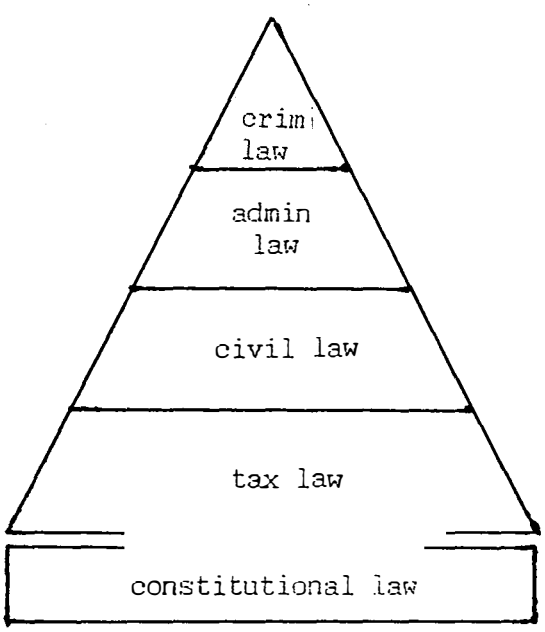
551 See n496.

II RECOMMENDATIONS

1. Proposal for a complex system of pollution-control legislation

It can be stated that success of pollution-control law depends on the interaction of various procedures, tools and remedies.[552] A future system should be founded on tax law, civil law, administrative law and criminal law of which pollution fees would form the basis and penal law would serve as a last resort.

Hierarchical description for a system of pollution-control law



552 *Cf* DV Cowen 'Toward distinctive principles of South African environmental law: some jurisprudential perspectives and a role for legislation' 1989 THRHR 25.

As an embodiment of the principle of prevention and the polluter-pays principle, pollution should be minimised on all levels by means of emission fees.[553] As an example charges on sulphur and nitrogen oxide emissions, exhaust fumes from motor cars, sewage as well as fertilisers and pesticides may be cited. The additional financial burden would usher in a period of innovation.[554] Funds collected by these means could be used for redressing environmental damage which has already occurred.[555]

If ESCOM, for example were to pay high pollution fees for its coal-fired power stations it would feel an incentive to switch over to 'clean' sources of energy, like solar energy. There are few places in the world where solar energy would be more efficient and could be used on a larger scale. Solar energy is the perfect source in a country with an extremely large proportion of sunshine and a high percentage of unused space.[556]

Even in Natal/KwaZulu which has relatively unfavourable conditions for solar energy compared to most of the country, solar installations covering only 0.1% of the

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553 See n470.
554 See n437.
555 See n461f.
556 *CF* B Huntley, R Siegfried & C Sunter 'South African Enviroment into the 21st Century' (1989) p38f, 52f.

land area could produce all the electricity the region uses. Urban areas could go quite far towards energy self-sufficiency by using solar energy (*eg* through solar cells on roof tops) and other local resources (*eg* waste incineration and methane from sewage fermentation).[557]

Sewage charges to be paid by the industry, municipalities and households would put an end to discharging unpurified effluents into rivers and the sea.[558]

If pollution fees fail in an individual case, civil law has to play its part. The efficiency of civil law should be raised by means of strict liability and relaxation of the burden of proof.[559] A presumption of the causal relationship, as implemented by the UmweltHG in Germany,[560] could be introduced for major polluters at first (*eg* oil refineries and chemical industries), in order to test the economic effects on them.

Whenever pollution fees are insufficient administrative law must be employed; pollution standards and bans on certain substances are appropriate means of dealing with

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557 See M Gandar 'Making Energy Environment Freindly' Earthyear 1990 p39ff.
558 See n51.
559 See n421f.
560 See n499.

hazards believed to be to serious to rely solely on pollution fees.[581]

Provisions should be made for judicial control of administrative actions which can be called for anybody (*actio popularis*)[582] or at least by parts of the population (*eg* people staying in the vicinity of installations).[583] Courts should have the right to demand data and informations from the executive.[584]

Criminal sanctions are inevitable if even administrative provision fail to prevent pollution. Criminal law should be employed as *ultima ratio*.[585] Heavy penalties must be imposed on polluters who endanger the environment recklessly.[586] Provisions should be made to ensure criminal responsibility of members of the board and senior employees as far as industrial pollution is concerned.[587]

The main function of constitutional law is to provide for the necessary 'tools' for an efficient environmental law,

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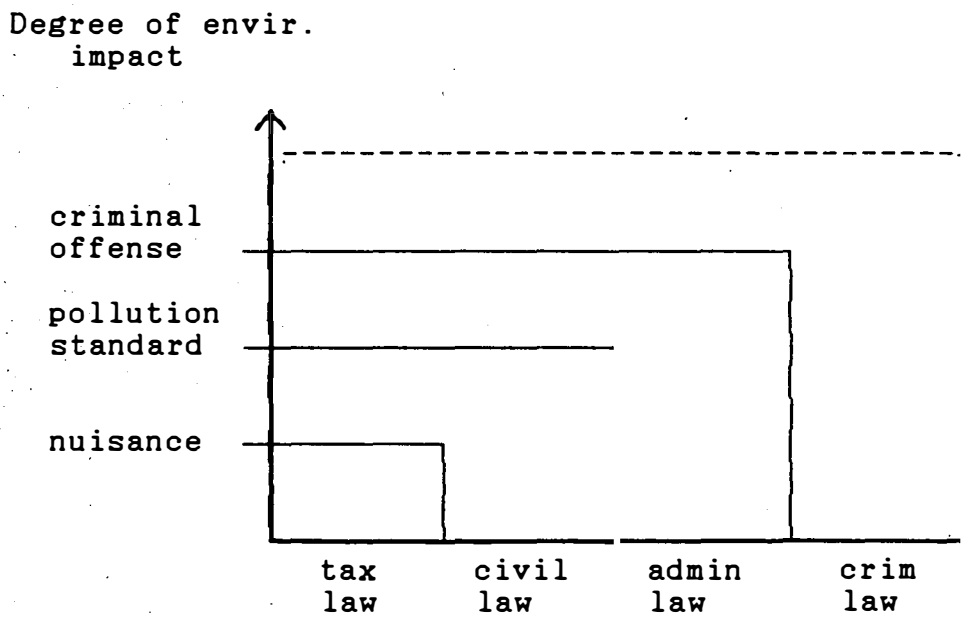
561 See n499.
562 See nn193,225.
563 See n201.
564 See n280f.
565 See n338.
566 See n337.
567 See s14 StGB (Criminal Law Act).

eg for effective judicial control. A legislative objective that the environment is to be protected may have some positive effects, yet it does not appear to be necessary in order to protect the environment successfully.[568]

Visualisation of pollution control through legislation



2. Urgent measures

Administrative procedures

Legislation should be immediately enacted providing for compulsory public participation in licensing procedures. As pointed out earlier, no other improvement of South

568 See n521ff.

African environmental law would be more cost-effective and easier to implement.[568] Genuine participation would help create public awareness of environmental issues. The administration should be obliged to release informations on its considerations and to give reasons for its decisions to all people who have raised objection.[570]

If obligatory EIAs are considered to be too burdensome for the country, the ministers involved should at least lose the right to veto the declaration in terms of s21 (1) and (2) Environment Conservation Act 73 of 1989 by the Minister of Environment Affairs.[571] A dispute between cabinet ministers should either be settled by the State President or by means of a majority vote in the cabinet.

Judicial control

An effective control of administrative actions is of paramount importance.[572] Since the law courts are reluctant to recognise public-law rights,[573] legislation

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569 See n132f.
570 *Cf* n130.
571 See n177.
572 See n178.
573 See nn240, 229.

should be passed by the which the requirements of *locus standi* are lowered. The principles concerning standing which have been developed by the German administrative courts (*locus standi* for anybody living in the vicinity of an installation)[574] appear to be an acceptable compromise between the introduction of an *actio popularis* [575] and the present legal position in South Africa.

Provisions should be made for appeals against administrative actions which could be lodged by people aggrieved by, for instance a permit granted to an emitter. It is of minor importance whether the courts of law, administrative courts or tribunals or a special pollution-control appeal board would consider the appeal, so long as the members of such a judicial board are truly independent and adequately qualified.[576]

Criminal law

Penalties for environmental offences should be raised; particularly fines must be increased tremendously in order to deter industrial polluters.[577] Police officers

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574 See n201.
575 See nn192, 225.
576 *Cf* n271.
577 See nn192, 225.

should receive instructions in pollution control and specific problems related to environmental offences.

Specific pollution control measures

Action must be taken immediately to fight air pollution caused by major industrial polluters. Desulphurization of the ESCOM power stations should be enforced after relatively short transitional period.[578] Emission fees for coal-fired power stations should be implemented without delay to promote the use of non-fossil energy sources.

Charges on packing material should be introduced in order to reduce waste due to excessive packaging of merchandise.[578] Recycling of reusable material should be subsidised by funds collected thereby,[580] since a high proportion of urban waste consists of recyclable materials.[581]

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578 See n39.
579 According to estimates 15 million tons of urban solid waste are produced per year, see E Adler 'Recycling: a workable solution' Earthyear 1990 p47.
580 See n461.
581 See Adler (n579) p49.

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