

A LEGAL ANALYSIS OF THE PROPOSED WASTE DISCHARGE SYSTEM IN TERMS OF THE SOUTH AFRICAN ENVIRONMENTAL AND WATER LAW FRAMEWORK

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SUMMARY

Environmental regulation in South Africa relies significantly on the “command and control” approach which employs environmental authorisations as the primary regulatory mechanisms. The National Water Act 36 of 1998 currently provides for an alternative regulatory mechanism (economic) in the form of the Waste Discharge Charge System (WDCS) which is to be implemented during the course of 2007. The WDCS is based on the polluter- and user-pays principles which are both economic principles aimed at internalising external costs of pollution. The main aim of the WDCS is to attach a cost to the impact caused by waste discharge with the intention of reducing the damaging effects of waste on water resources. This article investigates the WDCS by making some preliminary remarks on the rationale, nature, design, and aims of the system as it is established in the broader South African environmental and water law framework.

1 INTRODUCTION

The corpus of environmental law in South Africa has developed rapidly since the inception of the new constitutional dispensation in 1994.¹ A

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comprehensive framework of environmental legislation has been promulgated, which includes, amongst others, constitutional provisions,² environmental framework legislation,³ and media-specific legislation.⁴ Although these developments facilitate broader policy options for environmental management and governance, regulatory approaches remain focused on “command and control” mechanisms. “Command and control” regulatory regimes employ environmental authorisations and civil or criminal legal action as the primary pollution control mechanism.⁵ This is also still true for the South African scenario.⁶ This reality comes amidst increased criticism of the use of “command and control” tools which do not recognise the economic rationale underlying current regulatory trends that are increasingly based upon economic incentives.⁷

Having noted this criticism, a positive legal development is the possibility currently posed by the National Environmental Management Act 107 of 1998 (hereinafter “NEMA”), which allows for the use of a hybrid of regulatory options including market-based, or economic, instruments.⁸ The NEMA acts as the primary environmental framework legislation in South Africa, in terms

article bear no reflection on Carin Bosman’s official designation or position at the Department of Water Affairs and Forestry.

¹ Kotzé and Van der Walt “Just Administrative Action and the Issue of Unreasonable Delay in the Environmental Impact Assessment Process: A South African Perspective” 2003 *SAJELP* 39.

² S 24 of the Constitution of the Republic of South Africa, 1996 (hereinafter “the Constitution”) states that:

“Everyone has the right –

(a) to an environment that is not harmful to their health or well-being; and

(b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that –

(i) prevent pollution and ecological degradation;

(ii) promote conservation; and

(iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.”

³ The primary environmental framework act in South Africa is the National Environmental Management Act 107 of 1998.

⁴ This legislation includes, *inter alia*, the National Water Act 36 of 1998, the Water Services Act 108 of 1997, the Marine Living Resources Act 18 of 1998, the National Forests Act 84 of 1998, the National Heritage Resources Act 25 of 1999, the National Nuclear Energy Regulator Act 47 of 1999, the National Veld and Forest Fire Act 101 of 1998, the Nuclear Energy Act 46 of 1999, the National Environmental Management: Biodiversity Act 10 of 2004, the National Environmental Management: Protected Areas Act 57 of 2003, the Mineral and Petroleum Resources Development Act 28 of 2002, the Genetically Modified Organisms Act 15 of 1997, and the National Environmental Management: Air Quality Act 39 of 2004.

⁵ Wolf and Stanley *Wolf and Stanley on Environmental Law* 4ed (2003) 259; and Jans “The Relationship Between the IPPC Directive and Other EC Environmental Law” in Backes and Betlem (eds) *Integrated Pollution Prevention and Control: The EC Directive from a Comparative Legal and Economic Perspective* (1999) 45.

⁶ Authorisations are, *eg*, widely used in the Environment Conservation Act 73 of 1989, and the National Water Act 36 of 1998.

⁷ Kotzé *A Legal Framework for Integrated Environmental Governance in South Africa and the North West Province* (Unpublished LLD Thesis North-West University 2005) 63.

⁸ Du Plessis and Nel “An Evaluation of NEMA Based on a Generic Framework for Environmental Framework Legislation” 2001 *SAJELP* 1-37.

of which new policies, legislation, and regulatory mechanisms may be introduced.⁹

In the cadre of this enabling legal framework, the Department of Water Affairs and Forestry (hereinafter "DWA"), in terms of the National Water Act 36 of 1998 (hereinafter "NWA"),¹⁰ recently introduced a market-based, or economic instrument, as a vital component of its pricing strategy for the use of raw water, called the Waste Discharge Charge System (hereinafter "WDCCS"). The WDCCS aims to attach a cost to the use of water for disposal or discharge of waste. The WDCCS suggests a novel approach to environmental management and governance, since traditional economic systems regarded natural resources simply as inputs for production and overlooked the fact that not all natural resources renew themselves at a rate that matches their use. Furthermore, natural resources have a certain ability to absorb contaminants without adverse impacts.¹¹ This so-called "carrying capacity" of the environment has not been recognised as a service provided to which a cost can be attached. One of the ways in which resource economics and law may correct these oversights is by looking at the costs associated with the use of resources, in comparison with their renewal rates and carrying capacity.¹²

The WDCCS facilitates the above, essentially by attaching a cost to the impact caused by the discharge and the waste that it contains, with the intention of reducing the damaging effects of waste on water resources. This system therefore entails the use of economic instruments to, *inter alia*: promote sustainable development and the efficient use of water resources; promote the internalisation of environmental costs by impactors; recover some of the costs of managing water quality; and create financial incentives for dischargers to reduce waste and use water resources more optimally.¹³ The WDCCS is still in the process of being developed. It is envisaged that the system will be implemented during the course of 2007.¹⁴

In light of the foregoing, this article makes some preliminary observations regarding the WDCCS by investigating:

- The use of economic instruments in South African environmental law;
- The legal framework and principles on which the WDCCS is based;
- Relevant policy and guideline documents pertaining to the WDCCS; and
- Some observations regarding the future implementation of the WDCCS.

⁹ *Ibid.*

¹⁰ The NWA provides for the use of economic, or market-based, instruments, to encourage water conservation and the reduction of waste. See, *eg*, Chapters 2 and 3 of the NWA.

¹¹ Farmer *Managing Environmental Pollution* (1997) 18.

¹² Department of Water Affairs and Forestry 1999 *The Development of a Charge System for Discharging Waste into Water Resources* <http://www.thewaterpage.com/sapollution.htm> visited on 5 March 2005.

¹³ *Ibid.*

¹⁴ GN 1045 Preface to the Proposed Pricing Strategy for Raw Water in GG 27732 of 2005-07-01, 35.

2 ALTERNATIVE MECHANISMS FOR ENVIRONMENTAL REGULATION

Environmental impacts are sometimes unavoidable. Unwanted by-products of all human activities are characteristic of humankind, and inevitable in an industrial society.¹⁵ The more advanced the level of civilisation, the greater the potential for impacts on renewable and non-renewable resources. When these environmental impacts are managed and remediated in a responsible manner that does not pose a risk of harm to humans or their current or potential future use of resources, pollution problems will arguably not occur. However, unacceptable environmental practices by the economic sector result in pollution and loss of resource use. Weale¹⁶ observes that the most obvious feature of potential pollution problems is that they concern both public health and resources, which are public goods, and that the risk of pollution often arises from otherwise legitimate activities within society. The consequence is that the control of pollution is typically a regulatory function, since society must be protected from pollution by government action. Environmental law provides the enabling framework and mandate within which such regulation must take place. Environmental law also contains governance tools or mechanisms by way of which regulation can be executed. The four main mechanisms for environmental governance are “command and control” instruments, civil-based instruments, agreements, and market-based instruments. In this context, only the “command and control” approach and market-based instruments are discussed.

2.1 The “command and control” approach

One of the most common mechanisms for regulation is by way of environmental authorisations in terms of the so-called “command and control” approach. Environmental legislation contains, *inter alia*, provisions which enable environmental regulation bodies to authorise individuals to perform certain actions. An “environmental authorisation” may be defined as:

“A written order, document or certificate that may be issued by a competent authority (government department, minister, authorised official) to an applicant to grant the applicant permission to perform certain acts or activities that may have an impact on the environment.”¹⁷

The South African environmental law regime has, to date, made extensive use of authorisations.¹⁸ Rabie *et al* observe, in this regard, that “[t]he permit or licence system constitutes the prime regulatory technique as far as environmental conservation and pollution control are concerned”. There has

¹⁵ Asante-Duah *Hazardous Waste Risk Assessment* (1993) 384.

¹⁶ Weale *The New Politics of Pollution* (1992) 227.

¹⁷ Wessels *Environmental Authorisations and Mining Organisations* (MSc Environmental Management North-West University 2005) 19.

¹⁸ Rabie, Loots, Lyster and Erasmus “Implementation of Environmental Law” in Fuggle and Rabie (eds) *Environmental Management in South Africa* (1992) 123-124.

consequently been very little development in the area of alternative, or hybrid, uses of regulatory mechanisms.

2 2 Economic mechanisms

Use of economic instruments is relatively new in the environmental law and governance discourse.¹⁹ The application of economic instruments may sometimes be a specifically useful strategy for regulation by government, especially in those instances where regulation pertains to the protection of public goods, such as water resources.

In this context, it is important to distinguish between the charge to use a product or service, including charges paid for emissions to the environment (user-pays principle), as opposed to a payment made for the prevention or rectification of the effects of pollution (polluter-pays principle). Although both resort under the broad umbrella of market-based instruments, there are distinct principle and philosophical differences.

2 2 1 *The polluter-pays principle*

The polluter-pays principle plays a central role in economic instruments.²⁰ De Sadeleer²¹ observes in this regard that:

“The polluter-pays principle has successfully been invoked to address distortion of competition (objective of economic integration), as a preventive instrument to establish the internalization of chronic pollution (instrument of prevention *ex ante*), and finally to justify the adoption of fiscal measures ... it is generally accepted that the polluter-pays principle implies setting up a system of charges by which polluters help finance public policy to protect the environment.”²²

However, it must be noted that not all “users” of resources are necessarily “polluters”. For all substances, there will be a “carrying capacity” where a disposal or discharge into the environment may be deemed acceptable, and where this level of acceptability for each substance will depend on the inherent properties of the particular substance as well as on the characteristics of the receiving resource, and the pathways of transport and exposure. Above this level of acceptability, a disposal or discharge will pose a risk of harm, which is unacceptable. Dischargers or disposers introducing substances into the environment above these levels of acceptability, are not users but polluters, and are liable to carry the cost to prevent such harm (*eg*, by constructing and operating waste treatment facilities), and liable to carry

¹⁹ Sands *Principles of International Environmental Law* 2ed (2003) 159-160.

²⁰ This is also the case with the WDCS.

²¹ *Environmental Principles: From Political Slogans to Legal Rules* (2002) 44.

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

the cost of remedying the effects of pollution by, amongst others, rehabilitating the damage caused.²³

2.2.2 The user-pays principle

In many countries, including South Africa, public environmental services and goods are provided by government. This is because public goods are not subject to ownership and may be used by the public at large for their benefit.²⁴ Government may arguably be best suited to regulate public environmental goods through its normal governance functions. These functions are aimed at promoting the public benefit by way of, for example, collection of revenue through taxes, levies and charges to enable regulation and protection of public environmental goods. Economic instruments such as taxes, levies and subsidies may be usefully employed in these instances to facilitate regulation of human activities and the effects thereof on public goods.²⁵

Regulation by means of economic instruments as charges for the use of environmental resources may be done either directly or indirectly. Whilst direct regulation may include charges, taxes or subsidies aimed at producers or consumers using services provided by government (eg, payment for municipal services), indirect regulation relates to the situation where charges, taxes or subsidies apply to, for example, indirect products or services provided by government, such as the protection of resources, which are public goods.²⁶

An environmental “charge” to use a product or service may be defined as:²⁷

²³ See, for a detailed discussion: DWAF *Towards a Strategy for a Waste Discharge Charge System* (Water Quality Management Series Sub-Series No. MS 11) 33-35. See also s 19 of the NWA and s 28 of the NEMA which deal with the general duty of care and prevention and remediation of environmental damage. The WDCCS also refers to the user-pays principle. This principle is designed to complement the polluter-pays principle. The main rationale behind the user-pays principle is to attribute a price to the use of natural resources, in this instance, water resources. Both principles are based on the economic rationale of internalisation of external costs. However, whilst the user-pays principle applies to environmental resources and their users, the polluter-pays principle applies to discharges of pollution, and hence, only to polluters. The user-pays principle is therefore wider in its scope of application. See further De Sadeleer 42.

²⁴ Water resources may be regarded as natural resources falling outside legal commerce and which are available to all people. Such resources are generally referred to as *res communes omnium*. See further in this regard Van der Walt and Pienaar *Introduction to the Law of Property* 4ed (2002) 17.

²⁵ McLoughlin and Bellinger *Environmental Pollution Control: An Introduction to Principles of Administration* (1993) 54-55.

²⁶ McLoughlin and Bellinger 54.

²⁷ Other forms of economic instruments include, *inter alia*: taxes, marketable permits, deposit-refund systems, financial assistance schemes, financial enforcement incentives, administrative charges, liability and compensation schemes for damage, trade measures, consumer information incentives, non-compliance fees, environmental agreements, investment incentives, and performance bonds. See further Sands 161-167.

"[A] payment for discharge of a pollutant into environmental media based upon approximate pollutant loading".²⁸

The idea behind the use of economic instruments as payment for services provided by the environment is that regulation directed at one variable must influence another variable.²⁹ In other words, attaching a cost to the use of a natural resource will, when the cost is set at a sufficiently competitive ratio, cause an improvement in the quality of discharges, or will result in a minimisation of waste production.

User charges are thus incentive-based since, notwithstanding the obvious environmental benefits or environmental incentives resulting from less pollution, "[a]ny charge ... gives an incentive to avoid the charge".³⁰ The charge under the WDCS is a typical example of an environmental charge, whereby an amount of money is paid to government for the provision of environmental public goods or services, in this instance, services and goods relating to use of water resources within their carrying capacity.³¹

3 THE ENABLING LEGAL FRAMEWORK

3.1 The National Environmental Management Act 107 of 1998

The sole use of "command and control" mechanisms has changed somewhat with the introduction of the NEMA. The NEMA is South Africa's primary environmental framework legislation in terms of which other environmental sectoral acts, such as the NWA, must be promulgated and administered. As framework legislation, the NEMA should also provide for an innovative and hybrid use of multiple regulatory mechanisms including, "command and control" strategies; agreements and dispute settlement

²⁸ McLoughlin and Bellinger 57. The environmental charge is a regulatory mechanism particularly favoured in developed countries.

²⁹ McLoughlin and Bellinger 54.

³⁰ McLoughlin and Bellinger 57. Further benefits of user charges include, amongst others: they have a distributive function in that costs for pollution prevention and remediation are redistributed among interested parties; they provide more flexibility when compared to preventive standards such as environmental quality standards and product standards; and they may act as efficient instruments to procure revenue for the state. See further De Sadeleer 48-49.

³¹ McLoughlin and Bellinger, point out (57) that some of the disadvantages of user charges include that they require a vast and efficient administration for adequate regulation; and that it may be difficult to translate the amount and quality of pollution caused, or waste discharged, into economic or pecuniary terms. With regard to the first issue, it is doubtful whether South Africa currently has the administrative means to deal with additional administrative implementation and regulation, especially when considering the lack of human and financial resources prevalent in the overall environmental governance effort. See in this regard Kotzé 2-277. The second issue of translating pollution into relevant pecuniary terms may be resolved by considering various material characteristics as the basis for user charges, including, *inter alia*: weight, volume and the potential or actual environmental hazard. See further, McLoughlin and Bellinger 57.

mechanisms; civil-based instruments; and market, or economic, instruments.³²

An evaluation of the NEMA suggests that the act does not explicitly provide for the adoption and use of economic instruments.³³ As environmental framework legislation, it does however provide for broadly formulated principles of sustainability which bind all organs of state and within which environmental governance should be executed.³⁴

One of the principles contained in section 2 of NEMA is the polluter-pays principle.³⁵ Section 2(4)(p) provides in this regard that:

“The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.”

Section 2(4)(a)(ii) of the NEMA furthermore requires that pollution and degradation of the environment should be avoided or, where they cannot be altogether avoided, they should be minimised and remedied.³⁶ Moreover, waste must be avoided or, where it cannot be altogether avoided, it must be minimised and re-used or recycled where possible and otherwise disposed of in a responsible manner;³⁷ the use and exploitation of non-renewable natural resources must be responsible and equitable, and must take into account the consequences of the depletion of the resource;³⁸ and the development, use and exploitation of renewable resources and the ecosystems of which they are part must not exceed the level beyond which their integrity is jeopardised.³⁹ This relates to the principle of carrying capacity, and the use thereof for the disposal or discharge of waste.

These provisions highlight the vulnerability of natural resources, including water, and further provide the impetus for internalisation of external costs

³² Du Plessis and Nel 2001 *SAJELP* 13 and 28.

³³ Du Plessis and Nel 2001 *SAJELP* 32.

³⁴ S 2 of the NEMA states, *inter alia*, in this regard that:

“(1) The principles set out in this section apply throughout the Republic to the actions of all organs of state that may significantly affect the environment and –

(a) shall apply alongside all other appropriate and relevant considerations, including the State’s responsibility to respect, protect, promote and fulfil the social and economic rights in Chapter 2 of the Constitution and in particular the basic needs of categories of persons disadvantaged by unfair discrimination;

(b) serve as the general framework within which environmental management and implementation plans must be formulated; and ...

(e) guide the interpretation, administration and implementation of this Act, and any other law concerned with the protection or management of the environment.”

³⁵ See for a discussion on the application of the polluter-pays principle in South African law, Oosthuizen “The Polluter Pays Principle: Just a Buzz Word of Environmental Policy?” 1998 *SAJELP* 355-361.

³⁶ This provision essentially describes the preventive approach.

³⁷ S 2(4)(a)(iv) of the NEMA.

³⁸ S 2(4)(a)(iv) of the NEMA.

³⁹ S 2(4)(a)(vi) of the NEMA. This provision relates to the principle of carrying capacity of the environment which means that the environment and its resources must be utilized within the parameters of which they are able to naturally absorb the impacts of human activities such as pollution.

and the adoption of mechanisms to secure sustainable resource use. It may be derived from the foregoing that although the NEMA does not explicitly provide for emission or resource use charges as economic instruments, it sets the broad framework in terms of which other laws, such as the NWA, may facilitate the implementation of alternative regulatory approaches to comply with the obligations set out in section 2 of NEMA.⁴⁰

3 2 The National Water Act 36 of 1998

The sustainability of water provision, and the costs associated with the prevention and remediation of pollution of South African water resources by individuals and industry alike, is an ever-continuing concern in a country with an average rainfall far below international norms. Glazewski⁴¹ notes in this regard that:

“The Department of Water Affairs and Forestry estimates that at the present population level of 46.6 million, there are about 1200 kilolitres of fresh water available per person per year. The country is on the threshold of what is defined as ‘water stress’, with the increasing demand for water, coupled with the socio-economic conditions of the country, raising concern regarding water supply limitations. More importantly, between 12 and 14 million South Africans do not have access to safe water and over 20 million are without adequate sanitation.”

With this in mind, government enacted the NWA. The act is based on the constitutional right of access to water,⁴² and furthermore functions within the framework of the NEMA. The purpose of the NWA is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in ways which take into account various factors.⁴³ These include, amongst others, meeting the basic human needs of present and future generations; promoting the efficient, sustainable and beneficial use of water in the public interest; facilitating social and economic

⁴⁰ This conforms to current international trends and, more specifically, some principles of international environmental law. Principle 16 of the *Rio Declaration on Environment and Development*, 1992 states that:

“National authorities should endeavour to promote the internalisation of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the costs of pollution, with due regard to the public interest and without distorting international trade and investment.”

⁴¹ Glazewski *Environmental Law in South Africa* 2ed (2005) 427.

⁴² S 27 of the Constitution states, amongst others that:

“27.(1) Everyone has the right to have access to –
 (a) health care services, including reproductive health care;
 (b) sufficient food and water; and
 (c) social security including, if they are unable to support themselves and their dependants, appropriate social assistance.
 (2) The state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of each of these rights.”

See Glazewski (429-430) for a further discussion of s 27 and its application in the environmental context.

⁴³ S 2.

development; providing for growing demand for water use; and reducing and preventing pollution and degradation of water resources.⁴⁴

3 3 The Water Use Pricing Strategy

Apart from introducing a comprehensive regulatory regime for water conservation in South Africa, the NWA is also the first environmental act in South Africa that provides explicitly for economic instruments in the form of a pricing strategy in Chapter 5 of the act for the use of water, which encompasses the WDCS. It specifically deals with measures to finance the provision of water resource management services as well as financial and economic measures to support the implementation of strategies aimed at water resource protection, conservation of water and the beneficial use of water.⁴⁵

The pricing strategy may contain a strategy for setting water use charges for funding water resource management, water resource development and use of waterworks, and for achieving the equitable and efficient allocation of water.⁴⁶ The strategy may differentiate on an equitable basis between different types of geographic areas, different categories of water use, and different water users.⁴⁷ It may also provide for charges to be paid by either an appropriate water management institution, or consumers directly. It may further provide for the basis of establishing charges, provide for a rebate for water returned to a water resource, and, on an equitable basis, provide for some elements of the charges to be waived in respect of specific users for a specified period of time.⁴⁸

With specific application to waste, the NWA further stipulates in section 56(5) that the pricing strategy may provide for a differential rate for waste discharges, by taking into account the characteristics of the waste discharged, the amount and quality of the waste discharged, the nature and extent of the impact on a water resource caused by the waste discharged, the extent of permitted deviation from prescribed waste standards or management practices, and the required extent and nature of monitoring the water use.⁴⁹ In setting a pricing strategy for water use charges, the Minister

⁴⁴ *Ibid.*

⁴⁵ Part 1, Chapter 5 of the NWA specifically provides that:

“the Minister [of DWAF] may from time to time, after public consultation, set a pricing policy which may differentiate among geographical areas, categories of water users or individual water users. The achievement of social equity is one of the considerations in setting differentiated charges. Water use charges are to be used to fund the direct and related costs of water resource management, development and use, and may also be used to achieve an equitable and efficient allocation of water. In addition, they may also be used to ensure compliance with prescribed standards and water management practices according to the user pays and polluter pays principle. Water use charges will be used as a means of encouraging reduction in waste, and provision is made for incentives for effective and efficient water use. Non-payment of water use charges will attract penalties, including the possible restriction or suspension of water supply from a waterwork or of an authorisation to use water.”

⁴⁶ Ss 56(2)(a)-(c).

⁴⁷ S 56(3)(a).

⁴⁸ Ss 56(3)(b)-(e).

⁴⁹ Ss 56(5)(a)-(e).

of DWAF must consider the class and resource quality objectives for different water resources; and may consider incentives and disincentives to promote the efficient use and beneficial use of water; to reduce detrimental impacts on water resources; and to prevent the waste of water.⁵⁰

In 1999 DWAF published the first pricing strategy for raw water use charges.⁵¹ The pricing strategy in terms of the 1999 document only addressed water resource management charges, water resource development and use of waterworks charges, and charges for achieving the equitable and efficient allocation of water.⁵² No provision was made for waste discharge charges. It is specifically stated in the document that the WDCS does not form part of the 1999 pricing strategy, and that future provisions will accommodate the development of a strategy for waste discharge charges.⁵³ This was reviewed, and an update was published for public comment in June 2005. The 2005 version addresses section 56(5) of the NWA and makes specific provision for the WDCS. Notwithstanding the fact that the WDCS is listed separately from the water resources management charge in the document, it addresses the management of water quality in its broadest sense. The remainder of this article reflects on the principal provisions of the WDCS.

4 ANALYSIS OF THE WDCS

Whilst the pricing strategy in terms of chapter 5 of the NWA focuses primarily on volumes of water abstracted or discharged, the WDCS component thereof addresses the impact caused by a discharge as well as the waste it contains, with the primary aim of reducing the damaging effects of waste on water resources.⁵⁴ The WDCS aims to: promote sustainable development and efficient use of water resources; promote internalisation of environmental costs by dischargers; recover some of the costs of managing water quality; and create financial incentives for dischargers to reduce waste and use water resources more optimally.⁵⁵ The system is essentially based on

⁵⁰ Ss 56(6)(a)-(b).

⁵¹ GN 1353 Establishment of a Pricing Strategy for Water Use Charges in terms of s 56(1) of the National Water Act, 1998 in GG 20615 of 1999-11-12.

⁵² GN 1353 Establishment of a Pricing Strategy for Water Use Charges in terms of s 56(1) of the National Water Act, 1998 in GG 20615 of 1999-11-12, 27.

⁵³ GN 1353 Establishment of a Pricing Strategy for Water Use Charges in terms of s 56(1) of the National Water Act, 1998 in GG 20615 of 1999-11-12, 6 and 28.

⁵⁴ <http://www.thewaterpage.com/sapollution.html> visited on 2 September 2005. Whilst the initial cost to implement the system will amount to approximately R17.1-million, it is expected that revenue generated will amount to approximately R258-million. DWAF *Towards a Strategy for a Waste Discharge Charge System* (Water Quality Management Series Sub-Series No. MS 11) 9.

⁵⁵ DWAF 1; and GN 1045 Preface to the Proposed Pricing Strategy for Raw Water in GG 27732 of 2005-07-01, 29.

the concept of internalisation of external cost, encompassing both “user-pays” and “polluter-pays” components.⁵⁶

An investigation of the objectives of the WDCS suggests that it has as its primary objective to address the problem of degrading water quality and excessive water pollution.⁵⁷ These objectives are based on incentives, financial considerations, deterrent objectives and social objectives. The system should first and foremost act as an incentive to dischargers to encourage discharge of waste without causing harm to people or the environment. Secondly, the WDCS must ensure that funding is provided for water resource management aimed at pollution abatement. The system should further act as a deterrent to discourage dischargers from causing unacceptable damage to water resources. Fourthly, the system should ensure, in so far as its social objectives are concerned, to promote the sustainable transmission of water resources to future generations. This may specifically be achieved by encouraging pollution abatement, recycling, re-use of water, water conservation, and return of water to the original source.⁵⁸

Certain key concepts underlie the basic theory of the WDCS. Firstly, “waste” is defined in the NWA as including:

“[A]ny solid material or material that is suspended, dissolved or transported in water (including sediment) and which is spilled or deposited on land or into a water resource in such volume, composition or manner as to cause, or to be reasonably likely to cause, the water resource to be polluted.”⁵⁹

The underlying rationale of waste regulation through the WDCS is an attempt at self-regulation to avoid externally imposed regulation by government.⁶⁰ It has, however, been pointed out that the definition of waste in the NWA is narrower than generally accepted definitions of anthropogenic waste which includes both matter and energy.⁶¹

⁵⁶ See for a detailed discussion DWAF 33-35. The WDCS is mainly related to the user-pays principle. This principle is however also designed to complement the polluter-pays principle. See also the discussion above.

⁵⁷ DWAF 36.

⁵⁸ DWAF 39-40.

⁵⁹ S 1.

⁶⁰ DWAF 10.

⁶¹ It has been proposed that the definition of waste in the NWA be extended to also include, for example, waste heat, since the latter may also be responsible for altering the properties of a water resource. See DWAF 10-11. The definition of waste should furthermore be read with the definition of pollution in s 1 of the NWA, since pollution may be caused due to the introduction of waste into the ecosystem. Pollution is defined as:

“[T]he direct or indirect alteration of the physical, chemical or biological properties of a water resource so as to make it –

(a) less fit for any beneficial purpose for which it may reasonably be expected to be used; or
(b) harmful or potentially harmful –
(aa) to the welfare, health or safety of human beings;
(bb) to any aquatic or non-aquatic organisms;
(cc) to the resource quality; or
(dd) to property.”

On the basis of the definition of waste, water uses which will be subject to the WDCS include sections 21(e), 21(f), 21(g), 21(h) and 21(i) of the NWA, since these water uses directly, or indirectly relate to waste discharge or disposal.⁶² In this context “water use” is, *inter alia*, defined in section 21 of the NWA as:

- “(e) Engaging in a controlled activity identified as such in section 37(1) or declared under section 38(1);⁶³
- (f) Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit;
- (g) Disposing of waste in a manner which may detrimentally impact on a water resource;
- (h) Disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process;
- (i) Altering the bed, banks, course or characteristics of a watercourse ...”

DWAF, accordingly, regards a discharge⁶⁴ as any waste that may (potentially) have a detrimental impact on a water resource, including the marine environment, by either direct or indirect introduction to the water resource.⁶⁵ The WDCS therefore addresses both impacts on the ground and surface water components of the water resource. Although future versions of the WDCS will include calculations for the cost of the impact on groundwater resources, the current calculations in the WDCS only apply to impacts on surface water resources.⁶⁶

Discharges into municipal sewers or disposal of waste onto landfill sites by those not in control of the site, are not regulated by the WDCS since such activities are designated as Schedule 1 activities under the NWA.⁶⁷ Similarly,

⁶² GN 1045 Preface to the Proposed Pricing Strategy for Raw Water in GG 27732 of 2005-07-01, 30. Discharges are measured in waste load. Waste load is defined as: $Li = Ci \times Q$. Li is the waste load for pollutant (i) measured in kg; Ci is the concentration of pollutant (i), measured in mg/l; and Q is the volume of water measured in m³. The charge rate will not vary against concentration. It will rather be based on a linear relationship against load, using a constant charge rate for a specific variable. Where the average concentration in the discharge is less than the resource quality objective, the charge rate is zero and subsequently no charges will be applied. See further DWAF 13; and GN 1045 Preface to the Proposed Pricing Strategy for Raw Water in GG 27732 of 2005-07-01, 30.

⁶³ According to s 37, a controlled activity is understood to include irrigation of any land with waste or water containing waste generated through any industrial activity or by a waterwork; an activity aimed at the modification of atmospheric precipitation; a power generation activity which alters the flow regime or a water resource; intentional recharging of an aquifer with any waste or water containing waste; and an activity which has been declared as such under s 38 (in terms of s 38 the Minister of DWAF may declare any other activity a controlled activity).

⁶⁴ DWAF 11.

⁶⁵ Water resource is broadly defined by s 1 of the NWA as including a watercourse, surface water, estuary, or aquifer.

⁶⁶ GN 1045 Preface to the Proposed Pricing Strategy for Raw Water in GG 27732 of 2005-07-01, 30.

⁶⁷ Schedule 1 of the NWA sets out permissible water uses in terms of which no water use licence is required. These include: to take water for reasonable domestic use in that person’s household, directly from any water resource to which that person has lawful

payment for the use of municipal services, in as far as it relates to water use, is provided for in terms of the Water Services Act 108 of 1997.⁶⁸

“Charge” is defined in the NWA as meaning a fee, price or tariff imposed under the provisions of the act.⁶⁹ Most recent policy documents provide that the charge is considered to contain three components, namely a water resource management charge, an incentive charge, and a mitigation charge. The charges as set out in the three components are based on certain principles, which include: efficiency, equitability and fairness, simplicity, transparency, consistency, short and long term financial stability and predictability, integration with the overall water quality and pollution control strategy of DWAF, and affordability in terms of the administration of the system and from the perspective of the discharger.⁷⁰ The water resource management charge applies to all registered waste dischargers and includes contributions for the costs of water quality management in a specific water management area and the costs of operating the WDCCS. These charges would be based on a flat rate, and are purely based on the principle of “user pays”, using the service of government to manage to water resource.

An incentive charge is a charge that provides a disincentive or deterrent to the discharge of waste by authorised (licensed) users, based on the use of the resource as a means of disposing waste.⁷¹ This charge will be set so as to provide an incentive to the discharger to rather improve the quality of his discharge by constructing waste water treatment works. This may be regarded as a combination of the user- and polluter-pays principles, as well as a hybrid of “command and control” and market-based instruments. “Mitigation charge” is understood to mean the charge to recover the quantifiable costs of administratively implemented measures for the mitigation of waste discharge-related impacts on a catchment or sub-catchment scale.⁷² This charge will apply to certain collective or regional water quality management projects, such as regional treatment works.

access; to take water for use on land owned or occupied by that person, for reasonable domestic use; small gardening not for commercial purposes; and the watering of animals (excluding feedlots) which graze on that land within the grazing capacity of that land, from any water resource which is situated on or forms a boundary of that land, if the use is not excessive in relation to the capacity of the water resource and the needs of other users. It also includes to store and use run-off water from a roof; in emergency situations, to take water from any water resource for human consumption or fire fighting; for recreational purposes, to use the water or the water surface of a water resource to which that person has lawful access; or to portage any boat or canoe on any land adjacent to a watercourse in order to continue boating on that watercourse. Further activities include to discharge waste or water containing waste; or run-off water, including stormwater from any residential, recreational, commercial or industrial site, into a canal, sea outfall or other conduit controlled by another person authorised to undertake the purification, treatment or disposal of waste or water containing waste, subject to the approval of the person controlling the canal, sea outfall or other conduit.

⁶⁸ This act essentially provides for provisions relating to basic sanitation and basic water supply.

⁶⁹ S 1.

⁷⁰ DWAF 44.

⁷¹ GN 1045 Preface to the Proposed Pricing Strategy for Raw Water in GG 27732 of 2005-07-01, 30.

⁷² *Ibid.*

Charges in terms of Tier 2 would be levied irrespective of compliance with the authorised waste discharge standard and would apply when the recommended resource-quality objective is exceeded as a result of a number of sources. This component is once again mainly based on the “user-pays” principle – in this case the use of the regional treatment facility.

The WDCS thus seems to aim to accomplish two goals. Firstly, incentives are created for dischargers to keep waste discharges to a minimum.⁷³ Secondly, where no “self-regulatory” action is taken by dischargers, the relevant water management authority may take such mitigation measures as will be required to address the harmful effects of waste on the water resource. It is also noted that the WDCS charge fulfils the role of what is generally understood to be user and polluter charges.

The WDCS does not replace the cost for liability where damage as a result of pollution is, or can be, caused, as provided for in section 19 of the NWA. When the inhibitory or toxic pollutant levels are exceeded, the discharger will still be liable to pay for the cost of possible pollution and the cost of remediation of pollution.⁷⁴ It is difficult to determine which components of the WDCS relate to a user charge or an emission charge, since no explicit distinction is made in this regard. Emission charges can be levied on discharges of effluents and gases, whilst user charges are paid for services rendered by authorities, such as domestic waste removal or water provision.⁷⁵ The WDCS seems to be aimed at accomplishing all these objectives. One may thus rather speak of a hybrid type of charge in terms of the WDCS, which is aimed at services, emissions, incentives and mitigation.

It is furthermore noteworthy that the NWA specifically provides that no charge made under the act may be of such a nature as to constitute the imposition of a tax, levy or duty.⁷⁶ The rationale behind this provision seems to lie in the notion that the charge paid under the WDCS is regarded as a direct payment for a service as well as a measure for cost recovery,

⁷³ Incentive charges are meant to ensure the optimal use of water resources for discharge or disposal of waste. It is thus not based on the recovery of costs. It is rather an economic charge to promote the reduction of waste discharges in order to meet specific resource quality objectives. In this sense, the incentive charge arguably aims to promote more efficient and sustainable “self-regulation”. See further GN 1045 Preface to the Proposed Pricing Strategy for Raw Water in GG 27732 of 2005-07-01, 31-33.

⁷⁴ See also s 28 of the NEMA which deals with pollution prevention and remediation.

⁷⁵ Sands 161. The 1999 version of the pricing strategy explicitly states that the pricing strategy is not applicable to charges in terms of water service provision. This, it is stated, is regulated by the Water Services Act 108 of 1997. See GN 1353 Establishment of a Pricing Strategy for Water Use Charges in terms of s 56(1) of the National Water Act, 1998 in GG 20615 1999-11-12. Notwithstanding this provision, it is noted that the relevant water management authority will indeed provide a “service”, especially insofar as it relates to mitigation of the harmful effects of waste. Service provision in this context differs from the generally accepted understanding of service provision, *ie, eg*, provision of clean drinking water and removal of domestic waste. It is thus proposed that the charge must also be understood as meaning a charge for service provision, albeit in an indirect sense of the word.

⁷⁶ S 57(5).

including, for example, recovery of costs for resource management.⁷⁷ The fundamental difference between an environmental tax and an environmental charge is the manner in which revenue it generates is allocated.⁷⁸ Whilst environmental taxes are usually added to the general public budget, environmental charges are only used to finance certain environmental measures, such as measures to improve water resource quality.⁷⁹ In initial WDCS framework documents, DWAF argued that taxes and levies are indirect payments for services which are used to discourage certain activities.⁸⁰ Hence, the WDCS charge cannot be regarded as a tax or levy. However, the National Treasury held a different opinion, and the 2005 pricing strategy indicates that the incentive charge in terms of the WDCS is not strictly a user charge, but rather a levy.⁸¹ This is because the charge represents an unrequited payment and is intended to influence discharge decisions (based on the characteristics of an incentive charge).⁸² This interpretation by the National Treasury is questionable, especially when considered in terms of the unequivocally formulated section 57(5) requirement that no charge under the NWA may be regarded as a tax or levy. According to DWAF, this may be rectified by amending section 57(5) of the NWA so as to provide for taxes and levies, and by promulgating a Money Bill (to be done by the National Treasury on behalf of DWAF), to accommodate such a levy in terms of the National Treasury's tax policy.⁸³

These semantics aside, it is true that the WDCS, although not regarded as a form of environmental taxation in terms of the NWA *per se*, at least represents a market-based, or economic, instrument which seeks to internalise the cost of waste that causes pollution. It may best be described as a hybrid form of an environmental charge with characteristics of an environmental tax or levy.⁸⁴

It should also be noted that the WDCS makes a distinction with regard to the types of discharge sources. These sources are broadly classified as point sources and diffuse sources. Point sources include: outfall pipes from any activity classified as a water use; stormwater outfall pipes; irrigation points; run-off channels and sub-surface drains; controlled-release dams; and landfill leachate.⁸⁵ Diffuse sources include: evaporation dams and water impounds; landfill sites; irrigated agriculture; irrigation of waste; dryland agriculture; mines and industrial dumps and excavations; confined livestock

⁷⁷ DWAF 19.

⁷⁸ Sands *Principles of International Environmental Law* 2ed (2003) 161.

⁷⁹ *Ibid.*

⁸⁰ DWAF 19.

⁸¹ GN 1045 Preface to the Proposed Pricing Strategy for Raw Water in GG 27732 of 2005-07-01, 31.

⁸² *Ibid.*

⁸³ *Ibid.*

⁸⁴ The polluter-pays principle on which the WDCS is based requires payment for the cost of pollution. This, in the water context, includes: direct economic costs borne by downstream activities impacted by pollution; environmental costs borne by downstream activities impacted by pollution; and the cost of treating waste. See further DWAF 20. See also the discussion above.

⁸⁵ DWAF 23-24.

enclosures; urban activities, including domestic sewage practices and general urban waste; accidental waste spills; and facilities damaged by floodwater.⁸⁶ The significance of this classification is that the determination of impacts, and the costs thereof, may prove to be more difficult for diffuse sources than for point sources.

The WDCS currently provides for a finite number of pollutants. These are grouped into certain categories, including, amongst others: salinity, nutrients, oxygen demanding substances, biological pollution, suspended solids, acidity heavy metals, radionuclides, thermal pollution, environmentally hazardous substances, halogenated hydrocarbons, and colour. The list is currently being refined, and the aim is to address firstly broad water quality problems, specifically salinity and eutrophication, and secondly, to address site-specific constituents of concern.

The WDCS will be managed at national level and at catchment level.⁸⁷ DWAF is the relevant competent authority at national level, and is also the primary authority responsible for national coordination of the system, including: policy formulation; strategy formulation; assessment, evaluation and auditing of implementation; providing guidance for charges and approving charges set by Catchment Management Agencies (CMA); decisions on disbursement of revenue; and recognition of and awards to dischargers for innovative and effective waste reduction practices.⁸⁸ There are 22 catchment areas in South Africa, each with a CMA.⁸⁹ The CMAs will primarily be responsible for managing the WDCS billing mechanism. It is required of CMAs to draft a catchment management strategy in terms of section 8 of the NWA. These strategies must also take into account the relevant provisions, elements and objectives of the WDCS.⁹⁰

5 THE WAY FORWARD

It is envisaged that the WDCS will be implemented gradually and by way of a phased approach. It will be launched as pilot projects in priority catchments and will initially be limited to point source discharges. The main rationale behind this approach is to continually monitor the successes and failures of the system and to implement a strategy of continual improvement for the system to eventually function optimally across the country.

However, as is the case with the enforcement and implementation of almost all environmental laws in South Africa, a number of challenges are foreseen with the implementation of the WDCS. CMAs have not been

⁸⁶ DWAF 25-26.

⁸⁷ S 1 of the NWA defines a catchment in relation to a watercourse or watercourses or part of a watercourse as "the area from which any rainfall will drain into the watercourse or watercourses or part of a watercourse, through surface flow to a common point or common points".

⁸⁸ DWAF 45-48.

⁸⁹ Chapter 7 of the NWA.

⁹⁰ S 9 of the NWA.

established and operationalised yet. CMAs are a crucial component of an optimally functioning WDCS. Although regional offices of DWAF will in the interim be responsible for the implementation of the WDCS in the absence of CMAs, it is proposed that the success of the WDCS will depend to a large extent on the establishment and optimal functioning of CMAs for all catchment areas in South Africa.

Furthermore, the classification system for water resources has, to date, not been finalised. The classification system is of particular importance in so far as it is necessary for determining minimum and target concentrations for discharges. Moreover, the availability of resources for optimal and sustainable environmental governance efforts, both in financial and human capacity terms, is a concern in South Africa. For the WDCS to function optimally, it will be necessary to address concerns relating to the availability of human and financial resources and capacity.

6 CONCLUSION

The WDCS must be lauded as a positive development in so far as the environmental law and governance effort in South Africa is concerned. It is one of the first frameworks to introduce and provide for market-based, or economic instruments in the South African legal order and hence represents a fundamental break from the widely-favoured “command and control” approach. In this sense, the WDCS may also act as a blueprint for other sectors that are responsible for pollution regulation, to develop, adopt and implement similar economic mechanisms for regulation. These may include, for example, departments responsible for air and soil quality regulation.

The system is based on sound, internationally recognised principles, especially the user- and polluter-pays principles, and the objectives it aims to achieve may significantly contribute to a more sustainable water resource protection strategy in South Africa. Although there are a number of challenges that may bedevil the successful implementation of the strategy, it is noted that these challenges are not insurmountable. Political commitment, efficient administrative implementation and enforcement, and adequate compliance with the provisions of the system, may ultimately result in achieving the overall objectives of the NWA which are, *inter alia*, to ensure that the nation’s water resources are protected, used, developed, conserved, managed and controlled alongside sustainable imperatives.