

**SOUTH AFRICAN URBAN SOLID
WASTE LEGISLATION
AND ITS APPLICATION:
PROPOSALS TOWARDS REFORM**

by

LLEWELLYN BOTHA

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SYNOPSIS

The over-production by Man of waste and the consequent threat to life on Earth motivated this study of urban solid waste legislation and its application in South Africa.

"Urban solid waste" was seen as solid waste generated within an urban area by secondary industrial and commercial processes, domestic activities and littering, and deposited on land.

The unique South African context, in which the relevant legislation has developed and been applied, was acknowledged.

The overall objective was both:

a) to ascertain the extent to which the relevant legislation

- fulfils its functions in terms of its *raison d'etre*, and
- achieves its objectives;

and

b) to formulate guiding principles for reform of the legislation.

In order to achieve the overall objective, the following five specific objectives were undertaken:

1. To ascertain which existing and contemplated South African legislation relates to urban solid waste.
2. To establish:
 - * the *raison d'etre* of legislation,
 - * accepted criteria for good legislation.
3. To evaluate the relevant legislation, using the aforesaid criteria.
4. To ascertain, from waste managers:

- * problems experienced or foreseen by them whilst operating within the relevant legislation, and
- * their proposed solutions to those problems.

5. To formulate guiding principles for reform of the legislation.

The functions of the legislation in terms of its *raison d'etre* were seen to be the Command and the Sanction.

The objectives of the legislation were seen to be:

- * reduction of the amount of urban solid waste produced;
- * encouragement of optimum use of such waste produced;
- * encouragement of proper disposal of residual waste.

These objectives were seen to accord with the basic feature of urban solid waste management strategy which is: reduction of the amount of waste requiring ultimate disposal.

The five objectives were achieved as follows:

1. A literature review of existing and contemplated Parliamentary Acts, Provincial Ordinances and By-laws of the Republic of South Africa was undertaken. The relevant legislation was compared with legislation within which waste managers stated they operated.
2. The *raison d'etre* of legislation and twenty six accepted criteria for good legislation were established by way of personal interviews with jurists.
3. The relevant legislation was evaluated in the light of the criteria, and deficiencies in the legislation were identified.
4. The survey amongst waste managers was undertaken using the technique of personal interviews based upon predetermined questions. The waste managers' responses were recorded on tape and were later

summarised as answers to the questions. These summaries were checked with the respondents as to their accuracy.

5. Guiding principles for the reform of South African legislation were formulated. Therein it is proposed that:

- * all urban solid waste legislation should meet the twenty six criteria and strive to achieve its objectives methodically,
- * there should be a single Waste Control Act with a section for urban solid waste, and
- * further legislation should be enacted or amended.

Ultimately it was concluded that:

1. South African urban solid waste legislation contains several deficiencies;
2. there is a lack of knowledge on the part of waste managers with regard to the relevant legislation;
3. there is a need for:
 - * a discernable national waste policy,
 - * a comprehensive Waste Act,
 - * clear objectives for South African urban solid waste legislation,
 - * generally, reform of the legislation;
4. reform would promote implementation of urban solid waste management strategy.

It is recommended that:

- * the guiding principles be implemented in order to improve the legislation, its application and waste management;
- * the above-mentioned three objectives be set for the legislation.

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CHAPTER 1

INTRODUCTION

Environmental pollution caused by Man is an issue which affects all living organisms on Earth. Man is the only organism which can effectively counter environmental pollution at its source. Urban solid waste is a part of that source. Urban solid waste can, however, be correctly managed to avoid it becoming a critical problem. For that purpose legislation forms part of the strategy for urban solid waste management.

The focal point of this study has been legislation pertaining to the management of urban solid waste in South Africa. The evaluation of such legislation and its application, and proposals towards the reform thereof, are set out in this report. The outline of this report of the study is discussed below.

OUTLINE OF THIS REPORT

The study is dealt with in this report as follows:

This first chapter serves to

- * introduce the nature and extent of the study which has been undertaken,
- * state the assumptions, questions and perceptions upon which the objectives of the study were based,
- * state the objectives of the study,
- * set the context in which the study took place,
- * state the current position of urban solid waste legislation in South Africa,

- * state the perspectives from which the study was conducted and
- * state my intentions in conducting the study.

The next chapter deals with the methods which were followed by me in order to achieve the objectives of the study.

Chapter 3 first deals briefly with the background to legislation in South Africa. It then discusses the existing and contemplated South African legislation which relates to urban solid waste. Finally, the answers of certain waste managers on several issues of legislation are discussed.

Chapter 4 covers the establishment, with the assistance of jurists, of

- * the *raison d'etre* (that is, the purpose that accounts for the existence) of legislation,
- * accepted criteria for any good legislation and
- * accepted criteria for good solid waste legislation.

The evaluation of South African urban solid waste legislation is dealt with in Chapter 5. The extent to which existing and contemplated South African urban solid waste legislation inhibits:

- a) the fulfilment of its functions in terms of its *raison d'etre*,
and
- b) the achievement of the objectives of that legislation

is discussed.

Chapter 6 deals with the survey undertaken amongst selected waste managers in South Africa to ascertain:

- * the problems encountered or foreseen by them in operating within the relevant legislation,
- * their proposed solutions to those problems, and
- * issues which the waste managers would like to have incorporated into legislation.

The topic of Chapter 7 is the set of guiding principles proposed for the drafting of suitable legislation to promote

- * the fulfilment of the functions of urban solid waste legislation in terms of its *raison d'être*, and
- * the achievement of the objectives of urban solid waste legislation.

Overall conclusions and recommendations with regard to this study are dealt with in Chapter 8.

In order to ensure some understanding of the issues covered by this study, a description of the type of waste studied as well as the direction and extent of the study are discussed below.

STUDY OF SOUTH AFRICAN URBAN SOLID WASTE LEGISLATION

The type of waste studied

Initially I had decided to study legislation pertaining to all types of waste in South Africa.

However, there are several types of waste produced by Man. A study of legislation pertaining to all types of waste would not have been feasible within the period of twelve months and the financial constraints within which I had to operate. I thus had to choose which type of waste I could study within those constraints.

Urban solid waste is considered by me to be the type of waste which is most likely to affect the daily lives of the majority of urban South Africans on a regular basis. The issues involved with urban solid waste appeared to suit the constraints upon me. In the circumstances, I chose to study the legislation pertaining to urban solid waste.

Clarity on what is meant by "urban solid waste" in this study is necessary: In attempting to define urban solid waste, the concept of solid waste was first clarified.

Existing South African legislation does not contain any specific definition of solid waste. Thus the definition of the Environmental Protection Agency of the United States of America has been proposed as a useful guide (Lord et 1983 p390). This definition of solid waste is as follows:

"Any garbage, refuse, sludge from a waste water treatment plant, water supply treatment plant or air pollution control facility and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial or mining and agricultural operations, and from community activities, but does not include solid or dissolved materials in domestic sewage, or solid or dissolved materials in irrigation return flows, or industrial discharges which are point sources subject to permits under ... the Federal Water Pollution Control Act ... or source, specific nuclear, or by-product material as defined by the Atomic Energy Act ..." (as quoted by Lord et al 1983 p390).

Whenever reference was made in this study to "solid waste", such reference was made in terms of the above definition.

The sub-category of urban solid waste, however, requires further clarification. For the purpose of this study, urban solid waste was considered to be the solid waste which is generated within an urban area by

- * secondary industrial processes,
- * commercial processes,
- * domestic activities and
- * the activity of littering

and which is deposited on land.

Consequently, the following types of solid waste were *not* dealt with in this study:

- * mining wastes,
- * agricultural wastes,
- * wastes deposited directly into or onto water and
- * wastes released into the atmosphere.

Also specifically excluded from consideration in this study were:

- * toxic wastes,
- * hazardous wastes and
- * radioactive wastes.

The reason for the exclusion of the above seven types of waste is that, due to their nature, there is or should be specific legislation dealing with the problems presented by each of them. I submit that the several types of wastes should be researched and considered separately. They should, nevertheless, ultimately each be dealt with in conjunction with all the other wastes. This should be done within the overall concept of wastes in the environment.

After I had decided to study urban solid waste legislation, I consulted relevant literature to ascertain whether or not that legislation was seen by knowledgeable persons to be

- * fulfilling its functions and
- * achieving its objectives.

This literature search enabled me to make a final decision as to the direction and extent of the study.

Direction and extent of study

Several authors (Barnard 1983 pp11-13, Barnard and Ball 1987, Lord et al 1983 p407) have expressed views which have indicated that the legislation relating to urban solid waste in South Africa might neither be fulfilling its functions nor achieving its objectives.

Consequently, I decided to undertake a study of:

- * the extent and structure of such legislation, and
- * its application.

This was undertaken with a view to ascertaining whether or not urban solid waste legislation is, in fact, fulfilling its functions and achieving its objectives. I also decided that, should the study reveal that the legislation and its application need reform, I would make proposals for such reform.

This is a report of that study and those proposals.

The study could not, however, commence until the objectives of the study had been set.

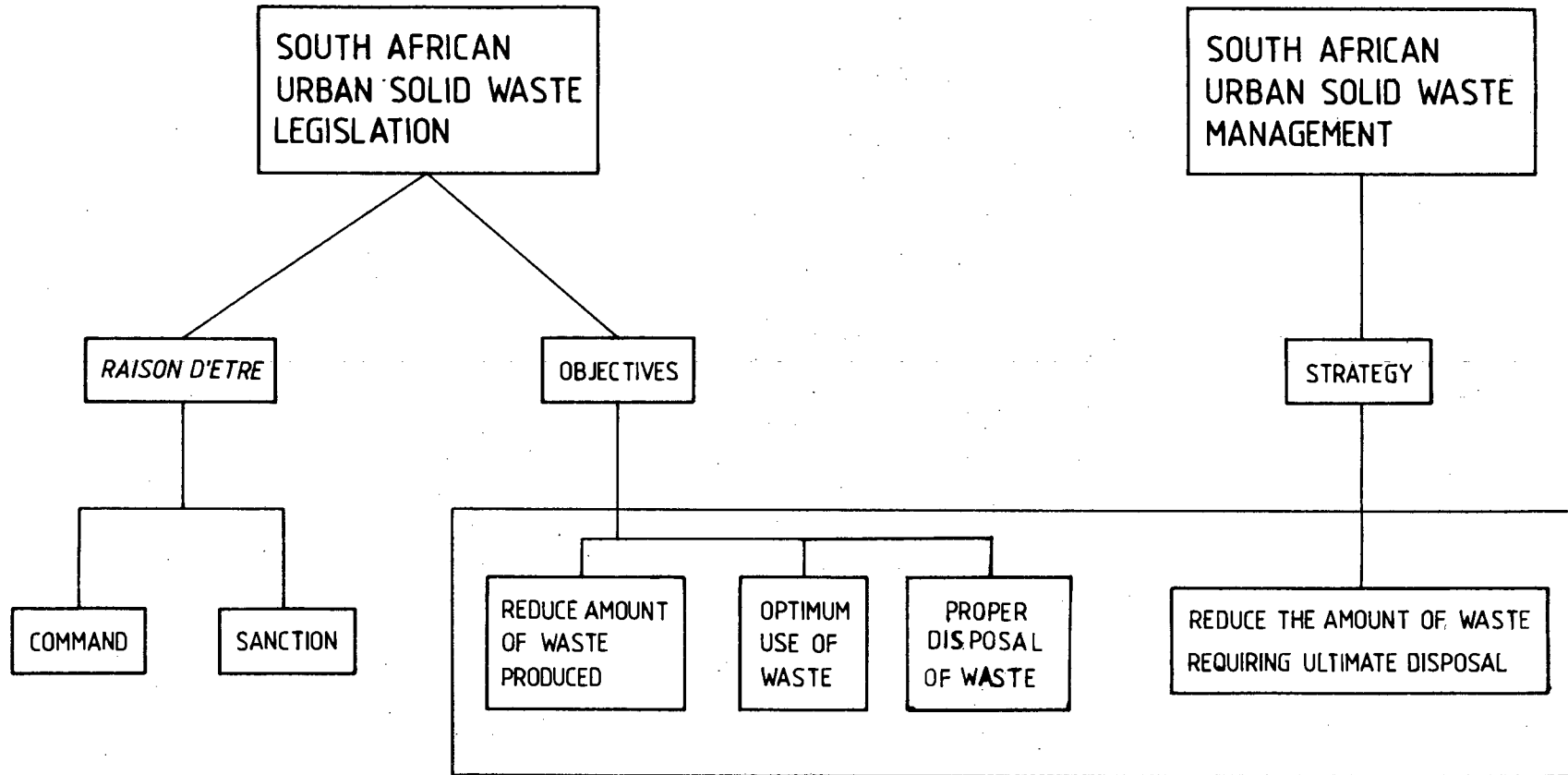
ASSUMPTIONS, QUESTIONS AND PERCEPTIONS AS BASES FOR OBJECTIVES OF THE STUDY

For the purpose of setting the objectives of the study I:

1. Assumed that:
 - 1.1 The overriding objectives of South African urban solid waste legislation are:
 - 1.1.1 The reduction of the amount of urban solid waste produced.
 - 1.1.2 The encouragement of the optimum use of that urban solid waste which is produced.
 - 1.1.3 The encouragement of the proper disposal of residual urban solid waste.
 - 1.2 The basic feature of South African urban solid waste management strategy is: The reduction of the amount of waste requiring ultimate disposal.

2. Posed the following questions:
 - 2.1 What South African urban solid waste legislation exists and is contemplated?
 - 2.2 Within which legislation have managers of urban solid waste in South Africa operated?
 - 2.3 Which legislation have urban solid waste managers in South Africa been aware of, but have not operated under?
 - 2.4 What is the *raison d'etre* (that is, the purpose that accounts for the existence) of legislation in general?
 - 2.5 What are the generally accepted criteria for any good legislation?
 - 2.6 To what extent does South African urban solid waste legislation:
 - * comply with the generally accepted criteria;
 - * fulfil its functions in terms of its *raison d'etre*;
 - * achieve its objectives?
 - 2.7 What problems do waste managers in South Africa experience or foresee whilst operating within existing and contemplated urban solid waste legislation?
 - 2.8 What solutions do the waste managers propose for those problems?
 - 2.9 What can be proposed for reform of South African urban solid waste legislation in order to promote:
 - * fulfilment of the functions of the legislation in terms of its *raison d'etre*,
 - * achievement of the objectives of the legislation, and
 - * implementation of the South African urban solid waste management strategy?

FIGURE 1: Features of South African urban solid waste legislation and management



NOTE: RED RECTANGLE SURROUNDS FEATURES WHICH ACCORD

3. Saw:
- 3.1 the objectives of South African urban solid waste legislation to accord with the basic feature of South African urban solid waste management (*vide* 1.1 and 1.2 above and Figure 1 on the opposite page);
 - 3.2 that the achievement of the objectives of urban solid waste legislation would promote the implementation of South African urban solid waste management;
 - 3.3 questions 2.2, 2.3, 2.6, 2.7, 2.8 and 2.9 as dealing with the application of South African urban solid waste legislation.

The objectives of the study were then set. They were based upon the above assumptions, questions and perceptions.

OBJECTIVES OF THIS STUDY

This study was undertaken with one overall objective and five specific objectives.

The overall objective of this study was composed of two divisions:

The first was to ascertain the extent to which existing and contemplated South African urban solid waste legislation:

- a) fulfils its function in terms of its *raison d'etre*,
and
- b) contains provisions which are conducive to the
achievement of the objectives of that legislation.

The second part of the overall objective was

- * to formulate guiding principles for suitable
legislation to correct deficiencies and shortcomings,
perceived in terms of its functions and objectives,
of urban solid waste legislation in South Africa.

In order to achieve the overall objective, the following five specific objectives were undertaken:

The first objective:

To review existing and contemplated South African legislation in order to ascertain which legislation relates to urban solid waste.

The second objective:

To establish:

- * the *raison d'etre* of any legislation,
- * accepted criteria for any good legislation, and
- * accepted criteria for good solid waste legislation.

The third objective:

To evaluate, using the aforesaid criteria, the legislation found to be relevant in terms of the first objective.

This evaluation was undertaken in order to identify, in the legislation, deficiencies which inhibit:

- a) the fulfilment of the functions of the legislation in terms of its *raison d'etre*, and
- b) the achievement of the objectives of the legislation.

The fourth objective:

To ascertain, from authorities on urban solid waste management in South Africa:

- * problems experienced or foreseen by them whilst operating within the relevant legislation, and
- * their proposed solutions to those problems.

The fifth objective:

To formulate guiding principles for the drafting of suitable South African legislation in order to promote:

- * the fulfilment of the functions of urban solid waste legislation in terms of its *raison d'etre*, and
- * the achievement of the objectives of urban solid waste legislation.

Thus the first four specific objectives were undertaken in order to achieve the first part of the overall objective. The fifth specific objective was undertaken in order to achieve the second part of the overall objective.

CONTEXT OF THE STUDY OF URBAN SOLID WASTE LEGISLATION

Before dealing with the current position of urban solid waste legislation in South Africa, and the context in which the legislation has developed and has been applied, I thought it would be useful to place the study of urban solid waste in its context. For this purpose I propose to discuss hereunder:

- * waste and Man
- * where waste fits into the concept of "environment"
- * why waste is a problem
- * waste management
- * waste legislation, and
- * the accord between the basic feature of waste management strategy and the objectives of urban solid waste legislation.

Waste and Man

It must be accepted that the production of waste by living organisms is an inevitable part of the process of living (Gray 1984 p246).

If left undisturbed, natural processes will deal with the wastes of organisms with little likelihood of the complex relationships between living things on Earth being upset. However, any disturbance in the natural processes will tend to have some effect upon living things involved in, or dependant upon, those processes (Miller 1984 p37).

The production by Man of abnormal quantities of waste disturbs the equilibrium of natural processes. This results in environmental pollution. Such pollution endangers the health of living organisms and can lead to the destruction of natural resources. Mc Gowan (1984 p260b) believes that environmental pollution "is one of the most serious problems facing humanity today". This situation compels the systematic application of the best of Man's resources in order to restore the disturbed processes to equilibrium and so ensure the continued existence of life on Earth.

Where waste fits into the concept "environment"

Waste is to be found at all levels of existence on Earth. Consequently, waste, everywhere, is an integral part of the environment - which is seen as "*the totality of objects and their interrelationships which surrounds and routinely influences the lives of men*" (Fuggle 1983 p2).

As part of the environment, waste often links the existence of the organism from which it originates to the existence of other organisms in the environment. The waste of one organism may well become the food of another organism. Thus it is important to note that what is considered to be waste by one organism may be considered to be a resource by another organism.

Why waste is a problem

Waste as it occurs in pristine natural systems is hardly ever construed to be a problem.

However, Man's current production of waste is manifestly greater than that of other organisms on Earth. This is largely because much of Man's waste is not natural waste eliminated by Man as a mere living organism. Instead, the bulk of Man's waste is artificially created by him during the course of his technologically-advanced existence upon Earth (World Commission on Environment and Development 1987 p240). Thus the process of human existence - particularly

in urban areas - has become so complex that the issues of the production of waste, and its disposal, can no longer be assigned to natural processes alone. They have now to be managed with the help of man-made structures (World Commission on Environment and Development 1987 pp254,255).

Waste management

What waste management means

Lord et al (1983 p390) state that "(t)he management of ... wastes implies the development and implementation of a strategy to deal with these materials wisely. The basic feature of such a strategy should be to *consider all possible ways of reducing the amount of waste requiring ultimate disposal.*"

As the concept of environmental pollution is multi-faceted (Mc Gowan 1984 p2601), the overall strategy for waste management has to be adapted to deal with the problems presented by each type of waste and the circumstances in which it is encountered. This overall strategy involves the application of varying approaches of both the pure and the human sciences, including legislative structures (Lord et al 1983 p389).

Who are waste managers?

Lord et al (1983 p389) believe that every man, woman and child is affected by the activity of the management of solid wastes. As they are producers and disposers of waste in some form or the other, men, women and children can, broadly speaking, be seen as waste managers. However, in a more qualified sense, waste managers must be considered to be those persons who are specifically involved in the development and implementation of a strategy to deal with wastes wisely.

Constraints in waste management

Most waste managers perform their function within certain constraints. These constraints are too numerous and varied to be listed here. They do, however, include

considerations of nuisance, health and safety, environmental impact, economic and social costs, technical feasibility and legislation (Bridgwater 1981 pp234,237).

I submit that waste legislation, as a constraint in waste management, is important with regard to, at least, the extent to which the legislation achieves its objectives.

Waste legislation

Objectives of urban solid waste legislation

Although legislation is considered to be a constraint for waste managers, I submit that it can also be used as a tool in "the development and application of a strategy to deal with materials wisely" (as stated by Lord et al 1983 p390).

Cowen (1987b pers. comm.) has proposed that waste legislation should be designed to:

- a) reduce the amount of waste produced; and
- b) encourage the optimum use of that waste which is produced.

Indirect support for at least Cowen's first objective is found in the criticism by Lord et al (1983) of existing solid waste by-laws. At page 407 they state that the by-laws "are not designed specifically as conservation measures to reduce the volume of solid waste" They imply that the by-laws should be so designed.

However, the White Paper on a National Policy regarding Environmental Conservation (Republic of South Africa 1980 pp11,12) clearly states that "(i)n order to place the disposal of solid waste and the combating of littering on a sound basis it will be necessary to -

4.8.1 ... ;

4.8.2 Adopt measures and apply incentives to promote the re-use, re-cycling and reclamation of re-usable packaging material (containers), prevent the depletion of raw materials and combat the pollution of the environment;

4.8.3 Apply measures and processes to regulate the production, decrease, utilisation and disposal of solid waste;

4.8.4 Create procedures for the profitable use or re-use of urban solid waste, including its use for the generation of energy;

4.8.5 Establish installations, facilities and machinery to make the recovery, recycling and re-use of urban solid waste possible;

4.8.6 Develop methods and measures to be applied to make the sorting of urban solid waste at source possible and enforceable; and

4.8.7"

On a comparative basis, Zalob (1979 pp623,624) reported that "(t)he foremost objectives of (the economic waste disposal programme prepared by the federal government of the Federal Republic of Germany) may be summarised as follows:

1. reduction of waste quantity;
2. exploitation of the possibilities of reuse and reutilization of wastes;
3. organized disposal of unavoidable wastes; and
4."

Gordon (1986) advocates a reduction, re-use and recycling approach to waste management. At pages 818 and 819 Gordon (1986) proposes that "(s)ource reduction legislation should

serve twin objectives. First, the legislation should be based upon those policies that lead to the most effective reduction, reuse, and recycling strategies. Second, the legislation should be designed to overcome several obstacles responsible for the limited use of source reduction to date."

Consequently, I submit that the overriding objectives of urban solid waste legislation are:

1. The reduction of the amount of urban solid waste produced.
2. The encouragement of the optimum use of that urban solid waste which is produced.
3. The encouragement of the proper disposal of residual urban solid waste.

The rationale for these specific objectives is the control of pollution and the conservation of natural resources. Such control and conservation are, in turn, the aims of all legal rules encompassed by environmental law (Rabie 1983b p32). I submit that urban solid waste legislation forms a portion of such rules.

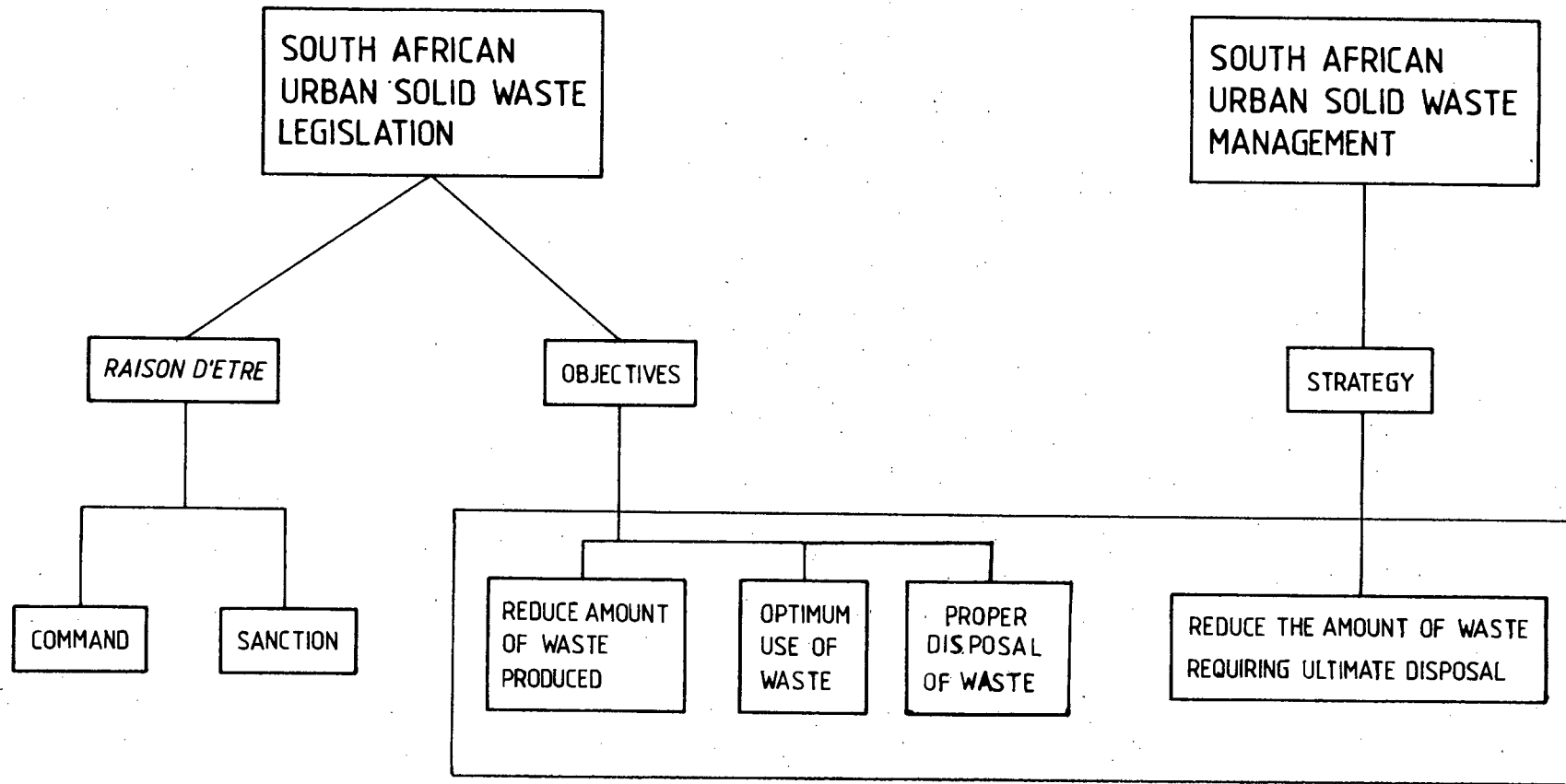
The possibility of the achievement of the objectives of urban solid waste legislation is discussed next.

Achievement of waste legislation objectives

Cowen (1987b pers. comm.) has stated that:

- a) Law-making is a purposive activity.
- b) In pursuing that activity, an acceptable objective must be set at the outset.
- c) The law must embody a means which is logically related to achieving that objective.

FIGURE 1: Features of South African urban solid waste legislation and management



NOTE: RED RECTANGLE SURROUNDS FEATURES WHICH ACCORD

- d) The law must not be disproportional: "in other words,...it (must) involve the least practicable interference with people's rights to achieve the authorised objective" (Cowen 1987a p29).

I submit that, by following the principles enunciated by Cowen as set out above, the objectives of urban solid waste legislation can be achieved.

Accord between basic feature of waste management strategy and the objectives of urban solid waste legislation

I accept the statement by Lord et al (1983 p390) that the basic feature of a waste management strategy "should be to *consider all possible ways of reducing the amount of waste requiring ultimate disposal.*" I submit that that basic feature of the strategy accords with the objectives of urban solid waste legislation as set out above (*vide* Figure 1 on the opposite page). It is for this reason, in my view, that good urban solid waste legislation, which achieves its objectives, can promote the implementation of the strategy for urban solid waste management.

With the study of urban solid waste legislation having been placed in its overall context, the current position of urban solid waste legislation in South Africa is discussed below.

CURRENT POSITION OF URBAN SOLID WASTE LEGISLATION IN SOUTH AFRICA

In South Africa solid waste management has, until recently, been considered to be a function of local government. A feature of South African solid waste by-laws is that they relate primarily to the protection of public health and the prevention or combating of nuisances (Lord et al 1983 p407). With the exception of the proposed regulations relating to the control of the disposal of solid waste (*vide* paragraph 1 under "Contemplated National Legislation" in Annexure A), the by-laws and other legislation have not been designed to

incorporate measures to facilitate the management of urban solid waste.

A fair measure of co-operation and co-ordination has been achieved in South Africa in regard to the disposal aspects of waste. The Control of the Disposal of Solid Waste regulations is evidence of this. Nevertheless, Lord et al (1983 p407) consider that there has been limited co-operation, consolidation or central planning at central or provincial government level in respect of solid waste management and legislation pertaining thereto.

The comments of Lord et al (1983), and those of Barnard (1983), Barnard and Ball (1983) and Lawrence (1986a) amongst others, confirmed my perception of the need for a study of the legislation dealing with urban solid waste and its application in South Africa.

In perceiving the need for this study I also acknowledged that the socio-political and socio-economic position in South Africa is unique. This fact is generally accepted. For the purpose of this study I decided to describe the elements of this unique context within which South African urban solid waste legislation has developed and has been applied. These elements of the context are unlikely to change much in the short to medium term. The results of my efforts at describing the elements are set out below.

The South African context for development of legislation

For the purpose of this study the elements of the South African context were considered to be:

- * a largely heterogeneous urban society residing, however, in artificially defined "homogeneous" circumstances with separate local authorities for the residential (and some business) areas of the various "homogeneous" groups;

- * a dynamic economy at various stages of development *vis a vis* the various groups with resultant diverse and dynamic patterns of consumption;
- * a large, growing and largely under-employed urban population with the majority in the developing sector of the economy;
- * varied attitudes and approaches towards, as well as needs and opportunities for, solid waste management in the various residential (and business) areas.

Besides having been conducted in the unique South African context, this study covers areas falling within the concerns of law, the environment and waste management. Thus clarity on the perspectives covered by the study, and my intentions in undertaking the study, require statement.

PERSPECTIVES AND INTENTIONS WITH REGARD TO THE STUDY

This study is not a review of the legislation from a purely legal perspective. Instead it is a study of legislation - and urban solid waste legislation in particular - as seen from the perspectives of both jurists and waste managers. This report is thus aimed at readers who are trained in either one of those two fields and who also have some knowledge or training in the other. Some understanding of environmental concerns by the readers is assumed.

I did not intend, in this study, to deal with the details of legislation proposed in terms of the guiding principles set out in this report. These would be aspects for further researchers to pursue. The comments and details obtained from waste managers and set out in Annexures K and M can be considered to be "bonuses" flowing from the study. I nevertheless intend that the matters covered - or uncovered - by this study will give some idea of the current status of the South African urban solid waste legislation. I also

intend that the proposed guiding principles will give some direction for future attempts at promoting:

- * the fulfilment of the functions of urban solid waste legislation in terms of its *raison d'etre*,
- * the achievement of the objectives of urban solid waste legislation and
- * the implementation of the strategy for urban solid waste management.

The methods which were followed by me in order to achieve the objectives of the study will be discussed in the following chapter.

CHAPTER 2

METHODS FOR ACHIEVING OBJECTIVES OF THE STUDY

In this chapter the methods which I followed in order to achieve the five specific objectives, and thus the overall objective, of this study are discussed. As the approach to each objective differed, each objective is discussed separately.

The extent to which the achievement of each specific objective contributed to the achievement of the overall objective, or otherwise, is discussed in other chapters dealing with each of those specific objectives. Those other chapters follow this chapter.

THE FIRST OBJECTIVE: RELEVANT LEGISLATION

The first objective entailed the ascertainment of which existing and contemplated pieces of South African legislation, at all three tiers of government, relate to urban solid waste. In order to meet this objective I undertook a literature review of existing and contemplated Parliamentary Acts, Provincial Ordinances and By-laws of major urban local authorities of the Republic of South Africa. The steps taken by me in this review are discussed below.

Existing South African urban solid waste legislation

Upon the commencement of the study I obtained a list of sections of current Acts, Ordinances and By-laws relating to waste issues. This list was compiled by an official of the Department of Environment Affairs. I then perused the sections of the legislation set out in that list in order to

ascertain which legislation on that list related to urban solid waste. I then compiled a fresh list of relevant legislation.

I also consulted topical literature in order to establish which further relevant legislation existed. When found, this further legislation was added to the fresh list.

Contemplated South African urban solid waste legislation

I also perused several Government Gazettes and relevant Bills of Parliament. This was done in order to ascertain which new Acts, or amendments to existing Acts, pertaining to urban solid waste were being contemplated by Parliament.

I also perused several Provincial Gazettes of the four provinces of South Africa. This was done in order to ascertain whether any new, or amendments to existing, Ordinances or By-laws pertaining to urban solid waste were being contemplated by the other two tiers of the legislature.

Relevant legislation encountered in this manner was also added by me to the fresh list.

Further contemplated legislation, published in the Government Gazette whilst the study was being conducted, was also included by me in the final list of relevant legislation.

The compilation by me of the final list of relevant legislation meant the achievement of the first objective.

Record of results

The final list of existing and contemplated legislation found by me to be pertinent to urban solid waste is set out in Annexure A.

COMPARISON OF WASTE MANAGERS' ANSWERS ON ISSUES OF LEGISLATION

The achievement of the first objective also provided the basis for the comparison by me of:

1. the list of legislation compiled by me with
- 2.1 the legislation within which nineteen recognised authorities on urban solid waste in South Africa stated they operated during the course of their management of urban solid waste in South Africa, and
- 2.2 the legislation, dealing with urban solid waste in South Africa, which the recognised authorities stated they were aware of and within which they had not operated.

The latter two groups of legislation were ascertained by obtaining answers to four questions posed during personal interviews conducted by me with the recognised authorities. The four questions are set out in Question Groups 1 and 3 in Annexure B. Question Group 1 comprised the two questions in respect of the existing legislation used. Question Group 3 comprised the two questions in respect of legislation not used.

The approach employed by me for the interviews with the recognised authorities is discussed in the following paragraphs. The authorities interviewed are hereinafter referred to as "the waste managers".

Choice of waste managers

The waste managers who were interviewed were chosen by me on the basis of my knowledge of the qualifications of some of the personalities involved. They were also chosen by way of the chain-referral technique. This technique entails forming a panel of persons to be surveyed. This formation is done by asking recognised authorities in the field being investigated for the names of other persons who the first

person believes to be authorities in the same field. The further persons so contacted are asked the same question until sufficient such persons, who are available for the purpose of the survey, are found.

The names of the waste managers who were interviewed by me are set out in Annexure C. At least seventeen of the waste managers interviewed are members of the Institute of Waste Managers (Southern Africa). The waste managers also represent both the public and private sectors.

Pilot study

A pilot study was not conducted by me. The reason was that there was insufficient time available.

Interviews with waste managers

Prior to the interviews being conducted, a set of the four questions was sent to the waste managers. This was done in order to afford the waste managers an opportunity to prepare themselves to answer the questions. The timing between the dispatch of the questions and the interviews varied from days to weeks. The timing depended upon, *inter alia*, the distance of the waste managers from Cape Town.

Most of these interviews were conducted during June 1987. Some interviews were conducted during July and September 1987. This was due to the fact that some of the waste managers had not been available earlier.

The interviews were of a semi-structured nature. During the course of the interviews the four questions were posed by me to the waste managers. Their responses were recorded on tape by me. The recording was done with the knowledge and permission of the waste managers. The tape recordings were subsequently played back when the responses were recorded by me in writing. I then summarised these responses as answers to the questions posed. During October 1987 I sent the summaries to the waste managers for comments regarding the accuracy of the recording and summary.

Link with fourth objective

The above procedures were also part of the procedures followed for the purpose of conducting interviews with the waste managers in order to ascertain:

- * the problems experienced or foreseen by them whilst operating within the relevant legislation, and
- * their proposed solutions to those problems.

This was in terms of the fourth objective.

Thus the set of questions posed to the waste managers consisted of two groups:

- * Question Groups 1 and 3 were posed for the first objective;
- * Question Groups 2 and 4 were posed for the fourth objective.

All the questions and their groupings are set out in Annexure B. I conducted each interview in respect of all four question groups.

The two sets of question groups, the posing thereof and the responses received thereto are discussed separately in this report: * Question Groups 1 and 3 are discussed under the first objective;

- * Question Groups 2 and 4 are discussed under the fourth objective.

Record of results and documents

The waste managers' summarised answers to Question Groups 1 and 3 are set out in Annexure D. These summarised answers were used by me for the comparison of the waste managers' answers on issues of legislation. This comparison is discussed in the latter portion of Chapter 3.

A copy of the letter sent to the waste managers giving cover to the set of questions is included in this report as Annexure E.

A copy of the letter sent to the waste managers giving cover to the summarised answers is included in this report as Annexure F.

THE SECOND OBJECTIVE: RAISON D'ETRE OF AND CRITERIA FOR LEGISLATION

The second objective entailed the establishment of

- * the *raison d'etre* of legislation,
- * accepted criteria for any good legislation, and
- * accepted criteria for good solid waste legislation.

The *raison d'etre* and both sets of criteria were established in conjunction with each other. This was done by means of a survey. The technique used by me was personal interviews of a semi-structured nature.

Choice of jurists

For the purpose of establishing the *raison d'etre* of and the criteria for any good legislation, I conducted the survey in South Africa with six persons who are knowledgeable in the fields of law. The six persons interviewed are hereinafter referred to as "the jurists". For the purpose of establishing the solid waste set of criteria, the survey was, however, conducted with only three of the jurists who are also knowledgeable in the field of environmental conservation. The names of the jurists are set out in Annexure G.

I chose the jurists on the basis of my knowledge of the qualifications of some of the personalities. They were also chosen by me by way of the chain-referral technique. This technique is explained on pages 22 and 23 above.

Preparatory steps before the interviews

Prior to the interviews being conducted I took the following preparatory steps:

1. The following were prepared by me as questions to be posed to the jurists:

- 1.1 Raison d'etre for legislation

- Why does society require legislation?

- 1.2 Criteria

- 1.2.1 What do you believe to be the generally accepted criteria for any good legislation?

- 1.2.2 What do you believe to be the generally accepted criteria for good solid waste legislation in the South African context?

2. I consulted literature in the fields of the *raison d'etre* of legislation and accepted criteria.
3. I prepared a proposal for the *raison d'etre* and a list of proposed criteria as "model" answers to the questions to be posed to the jurists. These "model" answers were based on Step 2.
 - 4.1 I sent a letter, in which the relevant questions were posed, to the jurists. Copies of the "model" answers were sent to the jurists under cover of the same letter. The jurists were asked to state whether or not they agreed with the "model" answers proposed to the questions.
 - 4.2 The above step was undertaken by me in order to afford the jurists an opportunity to consider the questions and the "model" answers prior to the interviews being conducted with them.
 - 4.3 In the event of the jurists disagreeing with the "model" answers, I had asked them to state their alternate answers. These statements were to be made during the course of the interviews.

5. Answers to Question 1.2.2 were requested from only three of the jurists. This was done as I knew that only three of the jurists are knowledgeable in the field of environmental conservation. I thus also sent a statement of the South African context (as set out on pages 17 and 18) to those three jurists. It was not sent to the other jurists. The statement was sent under cover of the same letter in which the questions were posed and under cover of which the "model" answers were sent.

No pilot study was conducted by me. The amount of time available did not allow for such a study to be undertaken.

The interviews with the jurists

I conducted the interviews with the jurists during June, July and October 1987. During the interviews the relevant questions were again posed by me to the jurists. The jurists then gave their views on the questions posed and on the "model" answers proposed by me to them.

I recorded the interviews on tape with the knowledge and permission of the jurists. These tapes were subsequently played back. At that stage the jurists' views were recorded in writing and summarised by me.

I decided not to refer the recorded views back to the jurists for comment. The basis for this decision was that the jurists had not been asked to generate original data. Instead they had been asked to comment upon original data. I felt that the chance and significance of any incorrect recording of data was not great enough to warrant the referral. The lack of sufficient time for referral also contributed to the decision.

Decisions: *raison d'etre* and criteria

The final decisions as to what constituted:

* the *raison d'etre* of legislation,
 * accepted criteria for any good legislation, and
 * accepted criteria for good solid waste legislation
 were made by me. Such decisions were based upon the
 literature consulted by me and the views of the jurists.

Record of results and letter

The *raison d'etre* of legislation and the criteria for
 legislation as proposed by me to the jurists are set out in
 Annexure H. The summarised views of the jurists are set out
 in Annexure I. The *raison d'etre* for legislation and the
 criteria for legislation as established by me in fulfilment
 of the second objective are discussed in Chapter 4.

A copy of the letter sent to the jurists setting out the
 questions, and giving cover to both the "model" answers and
 statement of the South African context, is included in this
 report as Annexure J.

THE THIRD OBJECTIVE: EVALUATION OF THE LEGISLATION

The third objective entailed the evaluation of the South
 African legislation found, in terms of the first objective,
 to be relevant to urban solid waste. The evaluation was
 undertaken in order to identify, in the legislation,
 deficiencies which inhibit:

- a) the fulfilment of the functions of the legislation
 in terms of its *raison d'etre* and
- b) the achievement of the objectives of the
 legislation.

Evaluation and identification of deficiencies

The evaluation and identification were undertaken by me
 after perusal of the relevant sections of the pertinent
 legislation. I viewed these sections as a body of
 legislation for the purpose of evaluation.

The two functions of the *raison d'etre* of the legislation were seen by me to be the Command and the Sanction.

The term "Command" means:

- * the prescription of the external conduct of society.

The term "Sanction" means:

- * the provision of the constraint (the ultimate usually being physical constraint) in the event of non-compliance with the Command.

With regard to the functions of the legislation in terms of its *raison d'etre*, I evaluated the legislation in the light of the accepted criteria. It was evaluated first in terms of the Command, and then in terms of the Sanction.

With regard to the evaluation of the legislation in terms of its objectives, I used the objectives themselves as instruments of evaluation.

Record of results

The evaluation of the legislation, and the identified deficiencies therein, are discussed in Chapter 5.

THE FOURTH OBJECTIVE: WASTE MANAGERS' PROBLEMS AND SOLUTIONS

The fourth objective of this study was the ascertainment of the problems experienced or foreseen by waste managers in operating within the relevant legislation, and their proposed solutions to those problems. A survey was undertaken by me amongst the waste managers in order to achieve this objective. The technique of semi-structured personal interviews was used for the survey.

Survey: link with first objective

The interviews conducted for the purpose of this fourth objective were part of the same interviews conducted for the purpose of the comparison of legislation linked to the first objective. The procedures followed for the interviews were, naturally, the same for both objectives (*vide* pages 22 to 24).

Record of results and documents

Question Groups 2 and 4 reflected in Annexure B are the questions posed to the waste managers during the interviews conducted by me whilst pursuing this fourth objective.

The summarised answers of the waste managers to the questions were later combined by me. This was done in order to avoid repetition of many of the answers when reporting upon them. The combined answers are set out and discussed in Chapter 6.

Additional comments, seen by me as not direct answers to the questions posed, were made by waste managers during the interviews with them. These additional comments were recorded and summarised by me in the same way as the answers to the questions. They are included in this report as Annexure K.

A copy of the letter sent to the waste managers giving cover to the set of questions posed to the waste managers is included in this report as Annexure E.

A copy of the letter sent to the waste managers giving cover to the summarised answers is included in this report as Annexure F.

Full range of waste managers' responses

The following documents represent the full range of responses received from the waste managers pursuant to the interviews conducted with them:

1. Annexure D: the answers to Question Groups 1 and 3;
2. Chapter 6: the summarised answers to Question Groups 2 and 4;

3. Annexure K: additional comments made by the waste managers during the course of the interviews with them.

THE FIFTH OBJECTIVE: GUIDING PRINCIPLES FOR SUITABLE LEGISLATION

The fifth objective entailed the formulation of guiding principles for the drafting of suitable South African legislation in order to promote:

- * the fulfilment of the functions of urban solid waste legislation in terms of its *raison d'etre*, and
- * the achievement of the objectives of urban solid waste legislation.

Bases for formulation of guiding principles

The guiding principles were formulated by me. They were based largely upon the results of the review, interviews and evaluation undertaken by me for the first four objectives. They are also based upon information and ideas obtained by me during consultations with relevant literature and knowledgeable persons in the fields covered by the other four objectives.

Record of results

The guiding principles formulated in accomplishment of the fifth objective are set out in Chapter 7.

The results of the application of the methods and techniques detailed in this chapter are discussed in the chapters which follow. The first of such chapters follows immediately hereafter and deals with the review of the South African legislation and related issues.

CHAPTER 3

SOUTH AFRICAN LEGISLATION

This chapter deals, in the main, with the accomplishment of the first objective, namely, the ascertainment of which existing and contemplated South African legislation relates to urban solid waste. Initially the chapter deals very briefly with the background to legislation in South Africa. It then discusses the relevant legislation ascertained in terms of the first objective. Finally, the waste managers' answers on issues of legislation are discussed.

BACKGROUND TO SOUTH AFRICAN LEGISLATION

Whilst society today still operates in terms of certain unwritten laws, there is a large portion of the law made by authoritative bodies which is reduced to the written format. This written format is known as "legislation". In South Africa the bodies responsible for making legislation have, until recently, been:

- * Parliament for national legislation (known as Acts);
- * Provincial Councils for provincial legislation (known as Ordinances);
- * Local authorities for legislation (known as By-laws) relevant to local, municipal-type areas.

These bodies are collectively known as "the legislature".

Significant changes in the legislature commenced when the Provincial Councils were abolished with effect from 1 July 1986. However, in terms of the Provincial Government Act 69 of 1986, the Provincial Administrators and their Executive Committees may, nevertheless, still be instrumental in the promulgation of legislation.

The other change which is taking place is the establishment of regional services councils throughout the country. This is taking place in terms of the Regional Services Councils Act 109 of 1985. These councils are being formed on a regional basis, usually around the larger cities. They are being formed "(t)o provide for the joint exercise and carrying out of powers and duties in relation to certain functions in (the region) by local bodies within such (region)..." - as stated in the long title to the Act. In terms of Section 1 of the Promotion of Local Government Affairs Act 91 of 1983, regional services councils are considered to be local authorities.

Despite the changes mentioned above, legislation still exists in South Africa and is promulgated on a continuing basis by the altered legislature.

THE FIRST OBJECTIVE: RELEVANT LEGISLATION

With a view to meeting the first objective, a literature review, including existing and contemplated Parliamentary Acts, Provincial Ordinances and By-laws of major urban local authorities of the Republic of South Africa, was undertaken.

The review revealed that at least the existing and contemplated legislation as set out in Annexure A is pertinent to urban solid waste. Comments upon that legislation follow below.

National legislation: range and responsibility

The legislation at the national level spans a period of some fifty years and covers a wide range of topics. No piece of legislation appears to have been promulgated or proposed to deal exclusively with the issue of wastes in the environment. In particular, there is no legislation dealing exclusively with urban solid waste. The exception appears to be the notice, in terms of the Environment Conservation Act 100 of 1982, to make regulations relating

to the control the disposal of waste. This is one of the three pieces of contemplated legislation listed in Annexure A.

Several Cabinet Ministers, as well as the State President, carry responsibility for the pieces of national legislation. A list of the persons currently responsible for the Acts is set out in Annexure L. From this list of persons it will be noted that, at the national scale alone, at least eight persons are, or can be, responsible for legislation dealing with the issue of urban solid waste. I submit that this situation does not promote the fulfilment of the functions or the achievement of the objectives of urban solid waste legislation in South Africa.

Provincial legislation

At the level of provincial government the range of topics is not as wide as it is at the national level. Nevertheless, out of the seventeen ordinances listed, only two appear to be aimed at dealing with specific environmental issues raised by the question of waste. These two ordinances are the Natal Prevention of Environmental Pollution Ordinance 21 of 1981 and the Orange Free State Dumping of Rubbish Ordinance 8 of 1976.

Local authorities' legislation

It is at the level of local government that legislation is found which deals specifically with the various types of waste encountered in the environment. However, the approaches and the content of the legislation are not standard. This non-standardisation does also not promote the fulfilment of the functions or the achievement of the objectives of urban solid waste legislation in South Africa.

A more detailed evaluation of all the relevant legislation listed in Annexure A follows in Chapter 5. The significance of the achievement of the first objective is, in the meantime, discussed below.

ACHIEVEMENT OF THE FIRST OBJECTIVE

The compilation of the list of legislation set out in Annexure A meant the achievement of the first objective of the study, namely, the ascertainment of which existing and contemplated South African legislation relates to urban solid waste.

This list of legislation was required in order to determine the extent and type of the relevant legislation. It was also required to provide the subject matter for the evaluation of the relevant legislation undertaken in terms of the third objective. Deficiencies in the legislation were identified during the evaluation.

In addition to the aforementioned functions, the above list of legislation also provided a basis for comparison of:

- a) the legislation found by me to relate to urban solid waste
with
- b) the legislation within which the waste managers stated they operated during the course of their management of urban solid waste in South Africa,
and
- c) the urban solid waste legislation which the waste managers stated they were aware of and within which they had not operated.

The Question Groups 1 and 3 posed to the waste managers in order to ascertain the legislation referred to in b) and c) above are set out in Annexures B and D. Their answers to the questions are set out in the Annexure D. These questions and answers are discussed in the following section.

WASTE MANAGERS' ANSWERS ON ISSUES OF LEGISLATION

The questions posed to the waste managers, and their answers thereto, will be discussed individually.

Question Group 1 : Question 1.1

The first question was posed to ascertain the extent of the knowledge of the waste managers in regard to the relevant legislation. It was also posed to elicit answers to serve as a reference base with a view to ensuring that no relevant legislation had been omitted from the list prepared by me. The question was:

"There are several pieces of legislation in South Africa dealing with the question of solid waste. Within which particular pieces of the legislation have you operated during the course of your management of the urban solid waste stream in South Africa?"

Whilst a detailed comparison here is beyond the objectives and scope of this study and report, it is useful to note that:

* Out of a possible eighteen occasions (two out of the nineteen waste managers were interviewed jointly), the Water Act 54 of 1956 and the Health Act 63 of 1977 were each mentioned on twelve occasions by the waste managers.

Further, the proposed regulations relating to the control of the disposal of waste (usually referred to in the responses as the "proposed landfill regulations") were mentioned on six occasions. These results would appear to be a reflection of the importance placed by the waste managers upon these three pieces of legislation. For the record, the Acts and regulations mentioned above are relevant to this research.

- * Very few waste managers appear to be aware of the extent of the relevant legislation. Managers D, E, L and R are the apparent exceptions.
- * Two waste managers (Managers A and B) made mention of only one Act each. Both Acts appear to be peripheral to urban solid waste management.
- * One waste manager (Manager P) made no mention of any Act at all.

The results of the survey in terms of this question showed that the waste managers did not mention any relevant legislation which had been omitted from the list prepared by me.

Question Group 1: Question 1.2

The next question posed was:

"Why have you operated within the legislation mentioned by you?"

This question was posed in an endeavour to ascertain in what light the waste managers viewed the legislation within which they operated. Examples of possible views of the legislation are:

- * as a tool in their management of the urban solid waste stream,
- * as an hindrance in their management of the urban solid waste stream, or
- * merely as "something" which was there and which had to be obeyed.

A study of the answers to this question revealed that a wide range of reasons was stated by the waste managers. Generally, however, it appeared that the underlying sentiments were:

* "Because they are there and are applicable."

* "Because they fit in with the practice of waste management."

I submit that no particularly significant reason was stated in answer to this question. I also submit that no strong sentiment was expressed in answer to this question. This seemed to indicate that, to date, the legislation has not appeared as a particularly important component in the management strategy of most of the waste managers.

Question Group 3 : Question 3

The following questions were also posed to the waste managers:

"Is there any legislation dealing with the question of urban solid waste in South Africa of which you are aware and within which you have not operated? If so, why have you not operated within such legislation?"

This questions were posed in an endeavour to ascertain the extent of the knowledge of the waste managers about the relevant legislation beyond that within which they operated. In answer to these questions only Managers B, G and H mentioned any legislation. The reasons mentioned by Managers B and G for not operating within the legislation appeared to be valid reasons. Manager H offered no reasons.

Again, the answers - or the lack thereof - indicated, in my view, a lack of knowledge on the part of the waste managers about pertinent legislation other than that within in which they had operated. I submit that this situation could have arisen as a result of either:

- * lack of concern on the part of the waste managers, or
- * lack of education in respect of relevant legislation,
or
- * the current status of urban solid waste legislation
in South Africa.

It could also have arisen as a result of a combination of any of the above factors.

CONCLUSIONS

Review of legislation

The review of the South African legislation revealed that:

1. There is a lack of legislation, at the national and provincial levels, dealing exclusively and specifically with wastes in the environment. This applies particularly to urban solid waste.
2. There is a wide range of topics of the legislation, at all levels of government, which does deal with solid waste issues in some form.
3. There are numerous pieces of legislation, of disparate origins, dealing with urban solid waste at all levels of government.
4. There are several persons and bodies responsible for administering existing and proposed legislation in respect of urban solid waste.
5. A standardised national approach and standardised provisions in the legislation are absent.

I submit that these facts detract from the potential for such legislation to be used to promote the fulfilment of the functions and the achievement of the objectives of urban solid waste legislation.

Consequently, the review of the relevant legislation highlighted the need for corrective action to be taken in regard to the above five aspects of the legislation. This need has been addressed in the guiding principles in Chapter 7.

Comparison: waste managers' responses

I submit that, viewed upon an overall basis, the responses of the waste managers reflect a lack of knowledge, or a lack of concern, on the part of the majority of the waste managers as to:

- a) the extent of the South African legislation which is relevant to their management of urban solid waste;
- b) why such legislation exists; and
- c) why they do or do not operate within such legislation.

I submit that these factors of lack of knowledge or of concern should be addressed and rectified by the relevant authorities. This should be done in order for urban solid waste legislation to be properly used in the management of urban solid waste in South Africa. Such action by the relevant authorities will also help to promote the fulfilment of the functions and the achievements of the objectives of urban solid waste legislation.

Proposals with regard to the issues of lack of knowledge and of concern have been made by me in section 3.1 of the guiding principles in Chapter 7.

In the following chapter the accomplishment of the second objective, namely, the establishment of the *raison d'etre* of and accepted criteria for legislation, will be dealt with.

CHAPTER 4

RAISON D'ETRE OF AND CRITERIA FOR LEGISLATION

This chapter deals with the achievement of the second objective, namely, the establishment of:

- a) the *raison d'etre* of any legislation,
- b) accepted criteria for any good legislation and
- c) accepted criteria for good solid waste legislation.

They will be discussed in that order below.

ESTABLISHMENT OF RAISON D'ETRE OF LEGISLATION

Background

The written division of the law referred to in Chapter 2, besides being known as "legislation", is also known as "statute law". In terms of the existence of mankind, and the development of society, legislation is a recent phenomenon. The scope of this study does not extend to tracing the history of the development of legislation. I decided, however, that it would be useful to ascertain the purpose that accounts for the existence of legislation in a modern, developing society such as that found in South Africa. I felt that the establishment of such *raison d'etre* would contribute to clear thinking in regard to this study generally. The *raison d'etre* was also required to assist in the evaluation of the relevant legislation in terms of the third objective.

Thus, a survey was conducted in order to ascertain the *raison d'etre* of legislation. The *raison d'etre* which was sought was to be applicable not only to South African legislation but also to legislation world-wide.

Survey of the jurists

The survey was conducted in South Africa during 1987. The survey was undertaken by means of personal interviews with persons who are knowledgeable in the field of law. The names of the persons interviewed are set out in Annexure G. For the sake of convenience they have been referred to as "the jurists" in this report.

Results

There was general agreement amongst the jurists that the *raison d'etre* of legislation is:

1. to prescribe the external conduct of society (referred to as the "Command"), and
2. to provide for constraint (the ultimate usually being physical constraint) in the event of non-compliance with the Command (referred to as the "Sanction").

Urban solid waste legislation is part of the legislation of South Africa. Consequently, the *raison d'etre* of urban solid waste legislation in South Africa is the *raison d'etre* as stated above.

The establishment of the *raison d'etre* signalled the accomplishment of only part of the second objective. The other two parts entailed the establishment of criteria for any good legislation and criteria for good solid waste legislation. These are dealt with below.

ESTABLISHMENT OF CRITERIA FOR GOOD LEGISLATION

"Good" legislation

One of the specific objectives of this study was to evaluate South African legislation. I therefore decided that criteria for adjudging any legislation as "good" should be established. The word "good" was used to describe the technical (as opposed to the moral) excellence of

legislation. As Boukema (1982 p 32) states, "A morally or politically desirable goal ought to be promoted by technically good law." The opposite of "good" in this instance would be "poor", or its synonym "bad". It is thus not used in the context of it being the opposite of "evil".

The study was, however, focused on urban solid waste legislation which had developed and been applied in South Africa. I therefore decided that criteria for good solid waste legislation in the South African context should also be established. Urban solid waste legislation is a part of solid waste legislation: the criteria developed for the latter would thus also be applicable to the former.

A survey was therefore conducted in order to establish the criteria for:

- * any good legislation, and
- * good solid waste legislation in the South African context.

Survey of the jurists

For the purpose of achieving this part of the objective, a survey was conducted in conjunction and simultaneously with the survey for the *raison d'etre* as set out above.

The criteria which were selected upon completion of the survey are discussed hereunder. The criteria are not listed in any particular order. They are particularly not listed in order of significance.

Criteria for any good legislation

The following criteria were established to be those basic ones with which any legislation should comply in order for it to be considered as "good legislation" on a technical basis:

1. Valid

In this instance legislation is considered to be "valid" when the reasoning reflected in the legislation necessarily follows from its premises (Boukema 1982 p66).

2. Solid

Legislation is viewed as "solid" when its derivation basis is non-contradictory (Boukema 1982 p66).

3. Socially needed / copes with a real problem

In order to meet this criterion the legislation should be addressing the current needs and real (as opposed to merely perceived) problems of the society for which it is promulgated. This means that if laws have achieved their purpose or have become irrelevant, then they should be withdrawn (Boukema 1982 p86).

4. Socially conscious

This criterion entails sensitivity towards the complexities of the society for which the legislation is promulgated. This means not only an awareness of those complexities, but also provision for them in the legislation. Further, people should not be seen as "passive recipients of orders" (Allen 1958 p412).

5. Correctly timed

"Whether a law is issued in time is a matter of fact or opinion. The criterion of timing is related to necessity, reality and economy. They all come down to three questions. Is this particular law necessary? Does it help to resolve the real problem of our time? Do we actually need a law at all?" (Boukema 1982 p85)

6. Of general application yet treats like cases alike

This criterion calls for the legislation to be applicable to all members of society. At the same time it must be selective and just in its implementation, bearing in mind the varying composition of society.

7. Acceptable

Boukema (1982 p90) states that "...the legislator has a threefold audience: those who are directly affected by the new legislation, society at large, and jurists who must be able to acknowledge that the new legislation fits into the legal system. ... The threefold audience must find the new legislation acceptable. ... Acceptability of new law will be enhanced if it is in accordance with the basic rights of a legal system and with the basic values of a society."

8. Possible

Legislation which is impossible to implement by either the executive or judicial authorities or the society to whom it applies is obviously not good legislation (Allen 1958 p414, Finch 1979 p38).

9. Clarity

Attributes for this criterion are: "Clear prose, lucid reasoning ... concise formulation ... short and understandable sections of (legislation) ... " (Boukema 1982 p57). Allen (1958 p414) also supports this criterion.

10. Consistent within itself

This means that laws should not be self-contradictory (Boukema 1982 p64, Finch 1979 pp37, 38).

11. Prospective

Legislators should seek to promulgate laws for the present and the future, and not with retroactive effect (Finch 1979 p37).

12. Avoids unintended consequences

The legislature should endeavour to influence behaviour within certain clearly defined objectives.

13. Justiciable

This means that the legislation should be capable of being subjected to the jurisdiction of the courts and of being adjudicated upon.

14. Congruent in respect of official action and declared rule

The legislation should reflect a consistency between its provisions and the current policies and actions of the legislature (Finch 1979 p38).

15. Properly promulgated

Correct procedures must be adopted to ensure that the legislation is made known to all persons affected thereby (Finch 1979 p37).

16. Flexible

This envisages certainty in the legislation with regard to its scope and purpose. This must be blended with sufficient latitude for points of detail to be dealt with by experts (Boukema 1982 pp60,61).

17. Efficient

This criterion has overtones of economics in that it is expected of the law to achieve its objective for the least cost. As Boukema (1982 p53) states, "An efficient law can stand a cost-benefit analysis." However, he goes on to say, "There is no blueprint for an efficient law. If laws are to be compared with tools, there is no blueprint for the efficient tool. Criteria of efficiency can only be determined in a pragmatic way, depending on the specific requirements that are at issue." (Boukema 1982 p53)

18. Economic

Laws should promote their objectives in an economic manner (Boukema 1982 p81). Again, a cost-benefit analysis should be applied.

I omitted the criterion "constant through time". I did so as I felt that it implied that the legislation would have to be static and thus not allow for changes envisaged in some other criteria such as "socially needed" and "socially conscious". The latter criteria are, in my view, more important than the former. The criterion "flexible" makes

provision for the basic certainty in the legislation which "constant through time" would tend to establish.

Criteria for good solid waste legislation in South Africa

The same general procedure as that used for establishing the set of criteria listed above was used for establishing the next set of criteria. However, the respondents in the second instance were specifically requested to consider the elements of the South African context referred to in Chapter 1. The undermentioned additional criteria for good solid waste legislation were established as a result of the survey:

1. The legislation should achieve a balance between:

*** economics, health and development;**

Here the White Paper on a National Policy regarding Environmental Conservation (Republic of South Africa: Department of Water Affairs, Forestry and Environmental Conservation 1980 p6) has relevance. In setting out the Overall Policy the White Paper states that, "Broadly, the Government's policy is that a golden mean between dynamic development and the vital demands of environmental conservation should be sought. The aim is, therefore, that man and nature should co-exist in productive harmony to satisfy the social, economic and other expectations of the present and future population."

*** justice and effectiveness;**

In providing for the achievement of the goals of the legislation, the legislature must balance its endeavours by taking cognisance of and incorporating principles of justice in that legislation.

*** public and private interests.**

Objective provisions *vis a vis* these two sectors

of society would assist in meeting this criterion. One sector should not be favoured above the other when an opportunity for equitable treatment in the legislation presents itself.

2. The legislation should:

*** be holistic in approach;**

"Holism is the term ... coined (by General J C Smuts) ... to designate (the) fundamental factor operative towards the making or creation of wholes in the universe." (Smuts 1987 p98) In this sense the criterion requires that the legislature, when promulgating solid waste legislation, should take the total environment, but especially those aspects which impinge directly upon solid waste issues, into account.

*** provide for minimum impact upon the environment;**

Conservation of the environment should always be an important objective of the legislation.

*** minimize health-related risks;**

The protection of both human and animal health is vital when dealing with waste issues.

*** compensate for market failures;**

Use of the environment for the disposal of waste products is normally not traded in the market place and is, therefore, not priced. Such use is seen as an "environmental good". The legislature, as trustee of such goods, should ensure that this type of good is adequately traded and priced (Gordon 1986 pp825,828, Stauth 1983 pp84,95).

*** be comprehensive.**

Legislation dealing with a topic should not:

- be dispersed,

- be fragmented, and
- deal with the topic superficially.

It should also deal with waste from its production, through its use, collection and, finally, to its disposal.

I omitted the criterion "be sustainable in both the short and long terms". I did so for the same reasons I omitted the criterion "constant through time" as discussed above.

The worth to the study of the *raison d'etre* and the criteria, once established, was duly considered by me. The conclusions reached by me with regard thereto are discussed below.

CONCLUSIONS

Raison d'etre

The *raison d'etre* of legislation assists clear thinking when evaluating legislation. The establishment of the *raison d'etre* of legislation proved to be useful for clarifying thinking in this study generally. The *raison d'etre* was also useful for the evaluation of the relevant legislation as undertaken in the third objective.

I concluded that it is essential to bear in mind the functions of the *raison d'etre* when formulating legislation.

Criteria

The twenty six criteria which were established drew attention to the fact that a considerable amount of thought and effort must be bestowed upon legislation to ensure that it can be classified as good legislation.

The criteria were subsequently used to evaluate the functions of the South African urban solid waste legislation in terms of its *raison d'etre*. They proved to be useful

for the purpose of identifying deficiencies in the legislation.

The criteria also formed a cornerstone for the guiding principles proposed in Chapter 7.

The next chapter will deal in some detail with the evaluation of South African urban solid waste legislation and the identification of deficiencies in that legislation.

CHAPTER 5

EVALUATION OF SOUTH AFRICAN URBAN SOLID WASTE LEGISLATION

The third objective of this study was the evaluation, using the criteria established during the second objective, of the relevant South African urban solid waste legislation. The evaluation was undertaken in order to identify, in the legislation, deficiencies which inhibit:

- a) the fulfilment of the functions of the legislation in terms of its *raison d'etre* and
- b) the achievement of the objectives of the legislation.

The deficiencies are discussed below. They are first discussed in terms of functions of the legislation in terms of its *raison d'etre*. These functions are the Command and the Sanction. Thereafter they are discussed in terms of the objectives of the legislation.

FUNCTIONS OF THE LEGISLATION IN TERMS OF ITS RAISON D'ETRE

The Command

It was found that the command is:

1. inadequately based in that its premises are not clearly stated;

There is no national policy statement in the legislation on the question of waste. Although it is possible to discern some basic policy or underlying premise in some of the legislation, such policy or premise is not always consistent or

clear. Consequently, the legislation could be considered to be "invalid", based on the discussion of "valid" on page 44. The reason is that there are no clear premises from which its reasoning could necessarily follow.

2. inadequately formulated and not properly directed in that:

2.1 it does not address all the needs of society and thus does not cope with all the real problems;

Much of the legislation has provisions which are outdated and no longer relevant. Further, several real issues are not addressed at all. Examples of real issues not addressed are: the reduction of waste and the privatisation of waste management.

2.2 it is not socially conscious in regard to the entire South African societal structure;

It does not appear that the legislature has been sensitive enough to the South African context in which the legislation has been promulgated and applied. The provisions of the legislation deal almost exclusively with waste on the basis of South Africa having an economically developed and fully serviced society, which is not the position.

2.3 it is too fragmented to be clear;

As mentioned on page 33 above, the existing national legislation covers a wide range of topics. The provincial Ordinances are a little more limited in their range. The by-laws are more specific. Sometimes, however, the same topic is dealt with at all three levels of government with little

uniformity or consistency in approach. Quite often it is dealt with on a piece-meal basis. An example of such a topic is litter. This wide range has arisen due, mainly, to the fact that the various pieces of legislation have been promulgated for different reasons. This fact probably leads to the most confusion.

2.4 it is not flexible in the diverse South African society and conditions;

The lack of a national policy leads to somewhat directionless and purposeless waste legislation. This leads to uncertainty in regard to both the scope and the detail of the legislation. This, in turn, results in lack of flexibility.

An example of the "uncertain" type of legislation is the Health Act 63 of 1977. In Section 20(1) the command to the local authorities is so broad that uncertainty prevails about what is meant to be done by the local authorities. It is not clear, for instance, whether or not certain waste management duties can be sub-contracted to private enterprise.

In other spheres the legislation is too rigid. The example here is the proposed regulations for waste disposal. In those regulations no allowance is made for the fact that South Africa has some areas which are water-deficient and other areas which have a water surplus.

2.5 the several pieces of legislation were promulgated for dissimilar reasons;

This deficiency has already been referred to in 2.3 above in regard to the question of clarity. It is also indicative of a lack of direction of the legislature in regard to the question of solid waste management.

3. not properly co-ordinated in that:

- 3.1 the promulgation thereof is not always direct in one piece of legislation, but via subsequent regulations or third parties;**

This results in legislation relating to a topic being dealt with by several parties or bodies at different times or at the same time. This is often dealt with at different levels of government.

- 3.2 the timing thereof is not always correct;**

An example of poor timing is the set of proposed regulations relating to the control of the disposal of solid waste. These regulations are sorely needed to address a real problem in South Africa. Despite this fact being well known to the legislature, no visible progress has been made towards the implementation of the regulations for something in excess of two years.

- 3.3 it is fragmented, duplicated and therefore both uneconomical and inefficient;**

The issues of fragmentation and duplication have already been referred to above in 2.3. I submit that the legislation would not stand up well to a cost-benefit analysis.

4. not always possible;

The legislation sometimes demands so-called First World standards of cleanliness and services in

areas where there is insufficient funding or infrastructure to achieve those standards.

5. not avoiding unintended consequences;

Due to its inadequate base and formulation, as well as its poor direction and co-ordination, the legislation sometimes has unintended consequences. An example once again is the Health Act 63 of 1977. Due to the vagueness of this Act with regard to solid waste issues, it is interpreted in numerous ways by various local authorities. This fact, in turn, results in varying standards of, and procedures for, solid waste management in adjacent areas.

6. not finally justiciable in all aspects;

The legislation is capable of being subjected to the jurisdiction of the courts. However, the vagueness of some of its provisions is such that I submit that the courts would have great difficulty in making a finding in terms thereof. The lack - and sometimes the absence - of suitable and uniform definitions (such as those for "litter" or "waste") could result in transgressions of the law going unpunished.

7. not reaching the entire society in that it is poorly promulgated in gazettes which are inaccessible to the vast majority of society.

All relevant legislation is promulgated in the Government and Provincial Gazettes. In theory, all members of society have access to both Gazettes. They are thus deemed to be aware of all legislation. Practically speaking this is not the case.

Inaccessibility to the Gazettes results in the legislation not reaching the notice of the vast majority of society. This fact, in turn, means

that the majority of society remains ignorant of the legislation.

8. not achieving a balance between:

*** economics, health and development;**

Whilst health is a major consideration in the legislation, the other two issues are not elevated to the same level of importance by the legislature.

*** effectiveness and justice;**

Without clear goals the legislation is not able to meet this criterion.

*** public and private interests.**

Private sector interests are hardly provided for and are heavily outweighed by the public sector provisions.

9. not holistic in approach;

The legislation is almost sectarian in its approach. There are a few exceptions in the Ordinances. There is little indication of an holistic influence in the legislature. The two Draft Bills on Environment Conservation, although espousing elements of holism in the principles of the proposed national policy, proceed to deal with the question of waste on a rather *ad hoc* basis. These Bills represent the latest proposed national legislation on environmental issues.

10. does not always provide for minimum impact upon the environment;

The legislation does not address the question of the conservation of the environment when providing for waste issues. The exceptions are a few specific Acts and Ordinances.

11. does not provide compensation for market failures;

There does not appear to be any attempt in the legislation to deal with the issues of market failures relating to environmental goods.

12. not comprehensive.

The dispersion and fragmentation of the legislation has already been discussed above (*vide* paragraphs 2.3 and 3.3).

The above list sets out the deficiencies for the Command. The deficiencies on terms of the Sanction are discussed below.

The Sanction

The sanction is:

1. not always appropriate;

I submit that fines and imprisonment are not necessarily the only ways to succeed in applying constraint upon members of society. Alternate punishments, such as community service or some form of publicity, are sometimes more applicable. This is especially true in a developing society. Such punishments are not provided for in the legislation.

2. not stringent enough;

Where there are conscious flagrant breaches of the law there is insufficient provision for sanctions such as heavy fines and restoration of any damage caused to the environment. Examples of such breaches of the law are dumping by a builder or a developer. I must concede that the legislature has indicated a tendency to increase penalties. For example, amendments made to

the Environment Conservation Act 100 of 1982 during 1987 increased the penalties in terms of that Act quite considerably. However, those sanctions are not yet applicable to urban solid waste.

3. not properly co-ordinated.

Sanctions for similar offences differ throughout the legislation.

This marked the end of the identification of the deficiencies in terms of the functions of the legislation. The deficiencies of the legislation in terms of its objectives are dealt with in the following paragraphs.

OBJECTIVES OF THE LEGISLATION

For the sake of clarity, the objectives of urban solid waste legislation are re-stated here:

1. The reduction of the amount of urban solid waste produced.
2. The encouragement of the optimum use of that urban solid waste which is produced.
3. The encouragement of the proper disposal of residual urban solid waste.

The deficiencies in the legislation which inhibit the achievement of each of its three objectives are discussed under separate headings.

Reduction of urban solid waste

With reference to this objective, there is:

1. no declared national policy for the reduction of waste;

The basis of such a policy would be the control of pollution and the conservation of natural resources. Such a basis is not discernible in the legislation. The concern of the legislation appears to be centred largely upon health, nuisances and the disposal of waste. The latest proposed national legislation deals mostly with the issue of disposal. The impression left by the legislation is that the legislature accepts the inevitability of the production of large quantities of waste. These approaches by the legislature do not promote the achievement of this objective.

2. no provision for incentives aimed at the reduction of urban solid waste;

Such a provision would probably follow a policy of control of pollution and the conservation of the environment as referred to in paragraph 1 above. However, such a policy is not a prerequisite for provision of incentives.

Financial incentives in the form of bonds, grants, loans and tax reductions for efforts at reduction would promote the achievement of this objective.

3. no provision for the gathering of data on urban solid waste produced.

Unless data on urban solid waste production is known, it is extremely difficult to focus attention upon areas of the greatest concern from the point of view of reduction, amongst others. This problem applies equally to the legislature and to waste managers. Individual local authorities may well record their own data. However, there is no legal compulsion for them, or any waste manager, to record data and to furnish the data gathered to a central organisation for processing and dissemination.

Encouragement of optimum use of urban solid waste

The deficiency identified for this objective is that

provisions for the encouragement of the optimum use of urban solid waste are lacking.

The legislation would appear, generally, to be aimed at gaining control of waste for the purpose of the final disposal thereof. Little, if any, of the legislation provides specifically for the re-use or the re-cycling of urban solid waste.

Encouragement of proper disposal of residual urban solid waste

The deficiency identified for this objective is that

operative comprehensive national provisions for the encouragement of the proper disposal of residual urban solid waste are lacking.

At the national and provincial levels the legislation contains many provisions which prohibit the improper disposal of waste. However, there is little in such legislation which directs the proper disposal of waste. The exception here is the set of proposed regulations to control the disposal of solid waste in terms of the Environment Conservation Act 100 of 1982. These regulations are, however, not yet operative.

At the local authority level the legislation does have provisions to encourage proper disposal. These provisions are promulgated by the individual local authorities and can differ greatly in approach, extent and detail. Thus, whilst provisions to encourage proper disposal of urban solid waste may exist for various urban areas throughout the country, national uniform by-laws with such provisions do not exist.

Upon completion of the evaluation process, conclusions based upon the evaluation were drawn by me. These conclusions are discussed in the paragraphs which follow.

CONCLUSIONS

The evaluation of the legislation revealed that the legislature, in the process of promulgating urban solid waste legislation, has made little provision in the legislation for and, thus, inhibits:

- * the fulfilment of the functions of the legislation in terms of its *raison d'etre* and
- * the achievement of the objectives of the legislation.

Deficiencies in legislation

The identification of the deficiencies in the legislation demonstrated the need for corrective action to be taken in regard to both the fulfilment of the functions of the legislation as well as the achievement of its objectives. It would appear that the legislature failed to follow at least two of Cowen's principles (Cowen 1987b pers. comm.). These two principles are that

- * in pursuing the purposive activity of law-making, an acceptable objective must be set at the outset, and
- * the law must embody a means which is logically related to achieving that objective.

Evidence that the legislature followed these principles is lacking.

Criteria for good legislation

The legislature has also not taken much cognisance at all of the twenty six criteria for good legislation when promulgating urban solid waste legislation.

The relevant legislation falls far short of compliance in respect of both the basic criteria as well as those for solid waste legislation. This would indicate a failure on

the part of the legislature to promulgate good legislation in the field of urban solid waste management. It also indicates a need to remedy this situation.

I appreciate that the above criticisms of the legislation are of a general nature and that several pieces of legislation, if taken individually, would probably comply with several of the instruments of measurement. However, I submit that the legislation would, nevertheless, be found to be wanting in many of the aspects mentioned above.

The evaluation of the legislation was undertaken by me alone. As a basis for comparison of my views, I felt it necessary to obtain views of the legislation as seen by persons who deal with it in its application. I thus sought the opinions of several persons, with experience in the field of waste management, on the legislation as seen from their perspective. The waste managers were accordingly interviewed with a view to, *inter alia*,

- * allowing for comparison of the problems they have experienced with the deficiencies identified by me, and
- * obtaining their opinions on the legislation and so furnishing me with a basis for proposals for reform.

These problems and opinions are discussed in Chapter 6 which follows.

CHAPTER 6

WASTE MANAGERS' PERSPECTIVES: PROBLEMS AND SOLUTIONS

A survey was conducted amongst the waste managers in order to ascertain the problems encountered or foreseen by them in operating within the relevant legislation, and their proposed solutions to those problems.

The survey was undertaken in order to achieve the fourth objective of this study.

This chapter deals with the results of that survey. The several issues arising out of the survey are discussed in this chapter under the following headings:

- * Authorship and content of summaries of responses
- * Responses: existing or contemplated legislation
- * Responses: problems and solutions not in legislation
- * Additional information from waste managers
- * Conclusions.

AUTHORSHIP AND CONTENT OF SUMMARIES IN REPORT

The summaries in this chapter and in Annexure M are not my views and ideas. They reflect the views and ideas of the waste managers. The meaning of some of the words and concepts contained in the summaries is not clear. These unclear areas emerged during the course of the compilation of the summaries. At that stage it was not possible to seek clarification from all the parties concerned. This was due to constraints of both time and finance. However, I do not believe that the essence of the statements by the waste managers has been distorted or confused by the unclear words and concepts.

The responses reflected in this chapter and in Annexure M have not been listed in order of significance. They have, however, been summarised and placed in groups under sub-sectional headings. Due to the overlapping nature of the responses, the headings of the sub-sections should not be construed as definitive or prescriptive. They should be seen merely as guides.

The following section of this chapter deals initially with the responses of the waste managers in regard to existing or contemplated legislation. Thereafter the responses of the waste managers in regard to other problems and solutions not presently legislation-related are dealt with.

RESPONSES: EXISTING AND CONTEMPLATED LEGISLATION

This section will deal with the following:

- (a) the problems encountered or foreseen by waste managers in operating within the relevant legislation, and
- (b) the solutions proposed by the waste managers for those problems.

These are, in essence, the issues raised in Question Group 2 which was posed to the waste managers.

Problems as seen by the waste managers

1. General aspects

1.1 Policy

There is no central government policy on the conservation of the environment, resources and the prevention of pollution.

1.2 Production and administration of legislation

1.2.1 There is a conflict of interests at the level of the producers and administrators of the legislation. This conflict leads to confusion in the production and the administration of the legislation.

1.2.2 There has been a lack of co-ordination in the formulation of waste management legislation.

1.3 Fragmentation

1.3.1 The legislation is fragmented (sometimes purely for inter-departmental political reasons) and dispersed. It is thus difficult to find, understand and implement. The vast quantity of legislation, and its state, results in many waste managers not knowing which legislation is applicable.

1.3.2 One has to deal with too many Government Departments which have a say in regard to the question of waste management. Consequently the administration of waste management is fragmented. There is thus a lack of and a need for centralised control and co-ordination of waste and the management thereof. There is no facilitating body for waste management.

1.3.3 The legislation is not enforced by all Peace Officers due to the dispersed nature thereof and consequent lack of awareness on the part of the authorities and the Peace Officers.

1.4 Co-ordination

There is no provision for a body to facilitate waste management.

1.5 Lack of clarity

1.5.1 There is too much legislation, none of which prescribes how to deal with wastes,

especially the question of disposal. The legislation has, largely, been written for different reasons - not for waste disposal - but it affects waste disposal.

1.5.2 Approaches to aspects of waste management differ in the various pieces of legislation.

1.5.3 Terminology differs in the legislation.

1.5.4 The definitions of "litter" in the legislation are poor.

1.5.5 Some legislation is outdated and/or no longer applicable.

1.6 Flexibility

There is no legislation dealing with solid waste removal in Black areas.

2. Specific aspects

2.1 Enabling legislation

2.1.1 A basic Act (the Health Act) is vague and not comprehensive enough - it is aimed at health problems rather than environmental or economic problems. It has been left to each local authority to implement a broad instruction from the Act. This leads to various interpretations and consequent conflict and confusion.

2.1.2 The question of privatisation of waste management is unclear because the enabling (Health) Act is poor in this regard.

2.1.3 It is not clear which functions of waste management should be dealt with at a local or at a regional level and who has which responsibilities for the various functions of waste management.

2.1.4 Effective and efficient waste management is made difficult as the regulations in terms of which officials from the local authorities' cleansing departments operate flow from the Health

Act. The officials are unable to pursue transgressions where health officials are the authorised personnel to do so.

2.1.5 Generally, good practice is not encouraged by the legislation.

2.1.6 Generally, the legislation is inadequate to assist in achieving the objectives of the waste managers.

2.2 By-laws

Municipal by-laws:

- lack *rationale*;
- are outdated;
- overgovern and overregulate;
- restrict entry of private operators;
- are not uniform throughout the country.

2.3 Qualifications and standards

The legislation does not provide for qualifications or standards for waste managers, particularly for private operators, before they can handle waste.

2.4 Generation of waste

There is a lack of attention given in the legislation to the preventative side of waste management.

2.5 Reduction of waste

Reduction of the urban solid waste stream is not being addressed.

2.6 Collection of waste

Certain specifications (for example, the thickness or quality of waste disposal bags) are absent from legislation.

2.7 Disposal of waste

2.7.1 Administration of the proposed landfill regulations by the Director-General: Water Affairs. He and his staff are not suitably qualified.

2.7.2 There is no proper planning for the provision of waste disposal sites in terms of the Physical Planning Act or other relevant legislation.

2.7.3 There is no operative national legislation dealing with the numerous aspects of the disposal of urban solid waste.

2.7.4 Some legislation is too rigid. An example here is the compulsion to contain waste within a 50-year floodline throughout South Africa. Thus:

- problems are foreseen with the application of the proposed landfill regulations in that too many landfill sites will not qualify and it will be a matter of governing "by exception";
- lower socio-economic societies of the future may experience problems applying the legislation. They are the most sensitive to the enforcement of legislation.

2.7.5 There is no legislation compelling:

- regionalisation of disposal;
- licencing or stricter control of disposal sites.

2.8 Judicial provisions, including penalties

2.8.1 Difficulties are being experienced with the implementation of the most specific of the legislation, namely, that for littering and the related fines.

2.8.2 There is an apparent lack of understanding of the implications of offences, and a consequent lack of sympathy for environmental issues, on the part of justice officials. Thus interest and

support from them in the enforcement of the provisions of the legislation is poor. Justice officials consider offences to be trivial and are reluctant to prosecute.

This poor support and reluctance affects the motivation for law enforcement officers to enforce the law; *inter alia* they feel at risk (physically and to their reputation) when pursuing transgressions.

2.8.3 Prosecutors are not prepared to prosecute in certain instances because of poor definitions in the legislation.

2.8.4 The Justice Department takes a very long time to process complaints and to bring matters to court.

2.8.5 The sanctions are:

- not appropriate (For example, community service as well as resultant publicity for offenders are not provided for.);
- not stringent enough;
- not properly co-ordinated in that they (for example, fines) differ from place to place (*due, inter alia*, to lack of uniform legislation);
- consequently ineffective.

Solutions proposed by the waste managers

The following are solutions proposed by the waste managers to the problems raised by them during the interviews.

3. General aspects

Due to the overlapping nature of some proposed solutions, certain specific aspects are covered under this sub-heading.

3.1 Policy and combined general and specific aspects

3.1.1 There should be a single Act of Parliament to supplement and co-ordinate (and, as far as possible, consolidate) the relevant existing legislation. The Act should at least:

- contain a national waste policy having the control of pollution and conservation of natural resources and the environment as its basis;
- deal with all facets of waste management on a national basis;
- contain different chapters for all the different types of waste;
- provide for the issue of more specific guidelines and/or regulations addressing the various facets of waste management dealt with as well as the different types of waste;
- provide that the policy, guidelines and regulations are applicable to all Departments of State;
- give due consideration to components such as health and economics;
- provide for the qualifications, standards and control of waste managers;
- provide that local authorities can contract with properly qualified persons only in regard to waste management issues;
- provide that the option of privatisation can be exercised at a local level with the local authority still ultimately being responsible;
- make it clear at which level (national, regional or local) various issues such as littering and dumping should be dealt with;

- impose a "duty of care" as per the British model for waste management;
- define, at least, "litter" for use on a national basis.

3.1.2 Legislation should provide that every local authority must have a waste disposal policy which must be referred to the (proposed to be established) Environmental Protection Agency for approval.

3.1.3 The country must have a legislative framework which applies universally - one law for everybody.

3.2 Co-ordination

3.2.1 Ensure co-ordination between all relevant Government Departments and disciplines on a national basis, particularly now that there are Regional Services Councils.

3.2.2 There should be a co-ordinating body to deal with the question of waste, as well as the application and the development of legislation pertaining thereto, on a national basis. This should be facilitated now that Regional Services Councils have been established. The following have been proposed to function as such a body:

Department of Environment Affairs

An Environmental Protection Agency

A semi-private sector body

A quasi-government body along the lines of the (USA) Environmental Protection Agency

The Foundation for Research Development of the Council for Scientific and Industrial Research;

The Institute of Waste Management - recognised as a professional body and supported by Central Government.

3.2.3 Establish an Environmental Protection Agency as a Central Government Department under the Minister of Environmental Affairs.

3.3 Lack of clarity

3.3.1 The overlap in legislation can be considerably reduced by the issue of regulations (in terms of the proposed Act for waste management) dealing with:

- recycling
- litter
- domestic refuse.

3.3.2 Standardise terminology in the legislation.

3.3.3 Standardise approaches to the various aspects of waste management.

3.3.4 Update legislation regularly.

3.4 Flexibility

3.4.1 Ensure that the relevant legislation is flexible enough in its application to take into account the different environments and socio-economic groupings where the measures are to be applied.

3.4.2 Legislation must accommodate the new type of society, as well as the character of the society, to ensure easy application of the legislation. Pointers in this regard are:

- * land-use legislation should be amended to provide for transfer stations where small contractors can off-load waste for the population to select what they require;
- * legislation should be introduced for the separation of putrescibles from the waste prior to collection;
- * waste managers will have to be more lenient on health measures, smells and air pollution.

4. Specific aspects

4.1 Enabling legislation

The legislation, whilst adhering to free market principles, must nevertheless give the people looking after the environment the tools with which to implement what is necessary.

4.2 By-laws

Greatly improved and consolidated national by-laws are necessary. These should be enabling legislation and should take into account the range of groups to be governed.

4.3 Qualifications and standards

4.3.1 Before waste managers are allowed to function as such they must develop the necessary expertise.

4.3.2 Open waste management market to private operators.

4.4 Education

4.4.1 Provision must be made in legislation for the education (and training, where necessary,) of all Peace Officers and justice officials with regard to all aspects of waste.

4.4.2 Educate justice officials whether or not Environmental Courts are constituted.

4.4.3 Undertake educational programme for decision-makers whose decisions affect the environment in respect of the environment.

4.5 Generation of waste

Deal with the preventative side of waste management very specifically. For example, legislate for the education of the public, attitude change, scientific investigation of the impacts of different kinds of packaging.

4.6 Separation of waste

Recycling through appropriate legislation or guidelines for the separation of waste at source. For example, householders to have separate containers for putrescibles, as a start. Non-putrescibles can then be taken to the transfer stations for further separation and use.

4.7 Disposal of waste

4.7.1 Legislation to encourage or compel regionalisation and thus higher standards in terms of which legislation:

- local authorities will be responsible for the collection of waste;
- regional authorities will be responsible for the disposal of waste.

This will result in the proper utilisation of expertise in the field of disposal.

4.7.2 Amendments must be brought to the relevant legislation to ensure that planning of development includes adequate provision for landfill sites.

4.7.3 Every landfill site should be:

- registered as such at the Deeds Office;
- licenced;
- operated in terms of conditions which should deal with the question of closure as well.

4.7.4 Implement landfill regulations.

4.7.5 As landfill sites affect so many aspects of the environment, someone other than the Director-General: Water Affairs and his staff should be responsible for the management of the proposed landfill regulations.

4.8 Judicial provisions, including penalties

4.8.1 The legislation should incorporate "positive" (for example, community service) and uniform sanctions and should ensure some form of

publicity (including possibly the publication of an apology in a newspaper) in respect of offenders.

4.8.2 Punishment should be something which will benefit the environment and be of educational value to the transgressor. Thus community service should aim at showing people what they have done to offend the environment so as to improve their understanding thereof.

4.8.3 There should be provision for some sort of immediate inconvenience to the transgressor.

4.8.4 Give the law "teeth" and pursue transgressions properly.

4.8.5 Certain sanctions should be amended to provide as follows:

- litterers (seen as "careless folk"): community service;
- dumpers (seen as "hard criminals"): heavy fines, goal and confiscation.

4.8.6 Environmental Courts should be established to deal with environmental matters such as transgressions of waste management legislation. This should expedite hearings on and ensure an understanding of the environmental issues involved. There should be provision for appeals, the award of costs and similar mechanisms to avoid abuse of the Court process.

4.8.7 Establish Municipal Courts staffed by people trained to deal with transgressions against environmental legislation dealing with issues such as waste, water pollution and noise.

RESPONSES: PROBLEMS AND SOLUTIONS NOT IN LEGISLATION

In terms of Question Group 4 the waste managers were asked whether, in the course of their management of the urban

solid waste stream in South Africa, they had experienced any other problems:

- a) which are not presently legislation-related; and
- b) for which they have solutions which they believe should be incorporated in legislation.

Their responses to this question group are summarised as follows:

5. General aspects

5.1 Production and administration

***PROBLEM:** Lack of a forum in which conflicting interests can meet and reconcile their differences as far as possible before issues (for example, deposit legislation) are put to the politicians.
SOLUTION: Create a forum of experts to discuss these issues.

***PROBLEM:** Lack of cyclical approach (involving people who work "at the coal face") in the review of proposed legislation.

SOLUTION: Provide that proposed legislation be published for comments. These comments and legislation should then be referred to the policy-making body (Council for the Environment) for evaluation before the comments and/or legislation are accepted or rejected by the Legislature.

5.2 Co-ordination

***PROBLEM:** Fragmentation of waste management operations.

SOLUTION: Regionalise such operations.

5.3 Flexibility

***PROBLEM:** Black areas are not attractive operating areas - for both economic and security reasons.

SOLUTION: Compel Black local authorities to have "interim" disposal sites - to allow local entrepreneurship and to facilitate final removal by private contractors.

***PROBLEM:** Varying stages of development throughout the country.

SOLUTION: Flexibility in the application of standards based on a well-researched assessment of the situation and after a clear definition of the problem.

6. Specific aspects

6.1 Qualifications and standards

***PROBLEM:** The setting of standards for waste management on a national basis.

SOLUTION: National legislation containing standards which reflect what the leaders in waste management are thinking and doing.

***PROBLEM:** Contractors without any experience or expertise in waste management are contracting with local authorities.

SOLUTION: Legislation should require contractors to have the relevant training, experience, expertise and equipment.

***PROBLEM:** Insufficient expertise in the field of waste management.

SOLUTION: Allow privatisation of certain aspects of waste management, with emphasis on suitably qualified contractors.

6.2 Education

***PROBLEM:** Lack of awareness of and belief in environmental issues generally, and the law relating thereto, on the part of the public.

SOLUTIONS:

* Provide for environmental education as part of the school curricula.

* "Legislate to educate" - because South Africa is really in Third World circumstances, and "educate before you legislate".

* Introduce legislation compelling local authorities to spend money on educating the public in respect of environmental issues.

6.3 Generation of waste

*PROBLEM: Too many packages/bulky packaging.

SOLUTION: Establish incentives to reduce the number of packages/bulky packaging.

*PROBLEM: Lack of incentives for actions which assist the management of the urban solid waste stream.

SOLUTION: Provision for subsidies in respect of actions which are designed to lessen the impact on the waste stream - but with a very tough bottom line which says "provided it is done in a non-inflationary way".

*PROBLEM: Responsibility for dealing with the waste generated.

SOLUTION: The generator should always be responsible for dealing with the waste generated by him at the source level - legislate for it.

6.4 Reduction of waste

*PROBLEM: Reduction of the urban solid waste stream.

SOLUTION: Establish and guarantee stability of the market in some form (for example, guaranteed prices) before introducing legislation for source separation.

6.5 Separation of waste

*PROBLEM: Insufficient source separation and recycling, particularly in the rural areas.

SOLUTION: Central government to provide a financial incentive to recycle by lowering the costs of transportation .

6.6 Re-use and recycling

***PROBLEM:** Garbage picking/scavenging.

SOLUTIONS:

* Promulgate regulations against it.

* Prohibit access to the site in any form unless under licence.

* It should be allowed to occur on small landfill sites and under controlled conditions at transfer stations for larger sites.

* It can be done in a safe and controlled fashion through, for example, separation of materials at source.

* Enabling legislation for flexible solutions for particular societies.

* Proper place is at transfer stations with picking belts and with contracts for components.

* It is possible to allow it where the waste is relatively clean, such as at an industrial refuse site.

***PROBLEM:** Dissimilar metals in beverage containers.

SOLUTION: Standardise the materials.

***PROBLEM:** Non-returnable items causing environmental problems (such as blocked drains).

SOLUTION: Impose a tax on all containers used by the public to encourage the return of the items for the recycling thereof. The tax so raised should be used to fund research into the recycling of non-biodegradable material.

***PROBLEM:** Collapse of markets for recyclable materials.

SOLUTION: Legislation to guarantee prices for relevant materials.

6.7 Collection of waste

***PROBLEM:** Collection of used beverage containers.

SOLUTION: Deposit legislation.

***PROBLEM:** High cost of collecting separated materials from households.

SOLUTION: Have the public separate materials but delivery must be by public to material recycling centres for some economic benefit to those who deliver.

6.8 Disposal of waste

***PROBLEM:** Incorrect disposal of containers.

SOLUTION: Legislation for compulsory message/instruction on the containers as to their disposal.

***PROBLEM:** Open land areas are filled indiscriminately to the detriment of the environment.

SOLUTION: Prohibit "filling in" without permission from relevant authority.

***PROBLEM:** High cost of disposal of waste.

SOLUTION: When every product (durable or non-durable) is produced a tax covering its cost of disposal should be imposed at the production end.

6.9 Data in respect of waste

***PROBLEM:** Lack of data in respect of waste.

SOLUTIONS:

* Require larger local authorities to produce data in respect of waste on a more organised basis.

* Require all persons using and operating landfill sites to keep records.

6.10 Trade secrets

***PROBLEM:** Need to protect trade secrets.

SOLUTION: Provide for the protection of trade secrets encountered in the course of waste management.

The above summaries represent the answers furnished by the waste managers to the questions posed to them. However, additional information was furnished by the waste managers during the course of the interviews. Such information is discussed below.

ADDITIONAL INFORMATION FROM WASTE MANAGERS

The interviews for the survey were conducted on urban solid waste management as seen from the perspective of those persons who have approached it "at the coal face". I therefore felt that additional information obtained during the course of the interviews could prove to be useful. Some of this additional information is reflected in the summaries in this chapter. However, none of the information is set out in the guiding principles in Chapter 7.

The additional information is set out in annexures to this report as follows:

- * **Annexure M: Details of the waste managers' solutions to the problems.** These details are reflected in the summaries in this chapter. The details have been recorded separately in Annexure M for the sake of easy reference. The main aspects of the relevant solutions have been incorporated into the guiding principles set out in Chapter 7.

- * **Annexure K: A record of comments made by the managers during the interviews.** These comments are *not* reflected anywhere in this chapter.

CONCLUSIONS

By conducting a survey of waste managers, a view of the legislation from a different perspective - that of persons who implement the legislation during the course of the management of urban solid waste - was obtained.

Comparison of waste managers' problems with deficiencies in legislation

The detailed comparison of:

- * the problems listed by waste managers with
- * the deficiencies in the legislation identified by me

is beyond the scope and objectives of this study. However, I submit that the above summaries of the waste managers' problems do not negate any of the deficiencies identified by me.

The above submission is supported by the fact that the survey confirmed that the relevant legislation:

- * lacks a base in the form of a national policy on waste;
- * is fragmented;
- * lacks co-ordination at central government level;
- * lacks clarity;
- * does not serve the larger South African society;
- * is generally poor enabling legislation.

The survey also drew attention to those shortcomings of the legislation which frustrate urban solid waste management, namely:

- * the absence of structures to deal effectively with the formulation and administration of urban solid waste legislation;
- * the absence of uniform national by-laws for urban solid waste;
- * the absence of legislation addressing both the question of the qualifications of waste managers and the standards for waste management;

- * the failure of the legislation to address the real problems such as
 - the education of society in regard to waste matters
 - the generation of waste
 - the reduction of waste
 - the separation of waste
 - the re-use and recycling of waste
 - the collection of waste;
- * the tardiness of the legislature in addressing the issue of the disposal of waste via appropriate legislation;
- * the great difficulties being experienced by the waste managers in applying the legislation through the existing judicial system;
- * the lack of data on waste in general;
- * the absence of legislation to protect trade secrets encountered during the course of waste management.

Remedies for deficiencies and shortcomings

The issues raised by the waste managers serve to confirm that there are many basic and vital aspects of the legislation dealing with urban solid waste which require attention and corrective action. At the same time, the waste managers confirmed through their responses that the application of the legislation, likewise, requires attention and corrective action. The issues so raised, along with the deficiencies identified in Chapter 5, are addressed in Chapter 7. In the latter chapter proposals are made for some such corrective action.

Usefulness of additional information

The details of the solutions listed in Annexure M could provide the basis for the details for much of such legislation. This would apply in the event of the legislation referred to in the guiding principles being implemented. The details could also serve as the basis for further research into issues raised both in the details themselves as well as in the guiding principles.

The additional comments made by the waste managers, and recorded in Annexure K, yielded some insights into the attitudes and approaches of several waste managers to urban solid waste issues. Many of these issues were not covered by the questions posed to the waste managers. Again, these comments could prove to be of assistance for either the implementation of legislation or for further research.

The conclusions reached at this stage of the study confirmed the perceived need to formulate guiding principles for the drafting of suitable South African legislation to promote

- * the fulfilment of the functions of urban solid waste legislation in terms of its *raison d'etre*, and
- * the achievements of the objectives of the legislation.

These guiding principles are discussed in the following chapter.

CHAPTER 7

PROPOSALS FOR REFORM:

GUIDING PRINCIPLES FOR URBAN SOLID WASTE LEGISLATION

Four of the five specific objectives have been discussed in this report so far. This Chapter deals with the fifth objective. This objective was the formulation of guiding principles for the drafting of suitable South African legislation in order to promote:

- * the fulfilment of the functions of urban solid waste legislation in terms of its *raison d'etre*, and
- * the achievement of the objectives of urban solid waste legislation.

The fifth objective was the last of the specific objectives. As such, it marked the finalisation of the study. Its contribution to the achievement of the overall objective of the study is thus worth reviewing at this stage.

REVIEW OF OVERALL AND FIFTH OBJECTIVES

The overall objective of this study was composed of two divisions: the first was to ascertain the extent to which existing and contemplated South African urban solid waste legislation:

- a) fulfils its function in terms of its *raison d'etre*,
and
- b) contains provisions which are conducive to the
achievement of the objectives of that legislation.

The second part of the overall objective was to formulate guiding principles for suitable legislation to correct deficiencies and shortcomings, perceived in terms of its

functions and objectives, of urban solid waste legislation in South Africa.

The fifth objective was thus the equivalent of the second part of the overall objective. The production of guiding principles marked the achievement of both the fifth specific objective as well as the overall objective. However, the extent to which the other four specific objectives contributed to the achievement of the overall objective is important.

BASES FOR GUIDING PRINCIPLES: FOUR SPECIFIC OBJECTIVES

The guiding principles presented in this chapter are based largely upon the results of the review, the review of the relevant legislation and the interviews dealt with in the four specific objectives. The guiding principles are therefore the recommendations flowing from the study. In essence they amount to proposals for the reform of both urban solid waste legislation in South Africa and its application.

It would appear that, until now, the legislation has been approached from too sectarian and narrow a base. The principles are aimed at giving guidance on a broad basis. Further, an holistic approach to the research, formulation and application of urban solid waste legislation is now proposed.

The principles are presented below in four sections, namely:

- * The criteria, *raison d'etre* of and objectives for urban solid waste legislation
- * A single comprehensive Waste Control Act
- * The section on urban solid waste in the Waste Control Act and
- * Further legislation.

The headings and sub-headings of the sections should not be construed as definitive or prescriptive. They should be seen merely as guides.

The bold print under the headings in the following paragraphs represents the guiding principles. The lighter print represents comment thereon.

1. THE CRITERIA, RAISON D'ETRE OF AND OBJECTIVES FOR URBAN SOLID WASTE LEGISLATION

1.1 The legislature should strive to ensure that all urban solid waste legislation measures up to all the criteria listed and discussed in Chapter 4. This should be done whilst bearing in mind:

*** the functions of the *raison d'etre* of legislation**
and

*** the objectives of the legislation.**

The existing legislation is not expected to be amended "overnight". However, such legislation should be revised as soon as possible and updated regularly. In so doing the legislature should make every endeavour to amend the existing legislation to accord with the aforesaid criteria, the functions of the *raison d'etre* of and the objectives for urban solid waste legislation.

New legislation should not present any real difficulties if approached correctly. This will require of the legislature both a sensitivity to the needs of the whole South African society as well as a preparedness to accept advice from persons knowledgeable in their fields. It will probably also require some extensive research and the application of all available resources where new problems and perspectives present themselves in the changing South African context.

1.2 The legislature, in striving to achieve the objectives of urban solid waste legislation, should:

- 1.2.1 accept that law-making is a purposive activity;
- 1.2.2 set acceptable objectives at the outset of that activity;
- 1.2.3 embody means in the law which are logically related to achieving those objectives;
- 1.2.4 ensure that the law " ... involve(s) the least practicable interference with people's rights to achieve the ... objective(s)" (Cowen 1987 p29).

2. A SINGLE COMPREHENSIVE WASTE CONTROL ACT

It is proposed that a single Waste Control Act should be promulgated. This Act should supplement and co-ordinate (and, as far as possible, consolidate) all relevant legislation which exists and which is contemplated at all levels of government. The Act should be under the control of the Minister of Environment Affairs

The Act should, at least:

2.1 National policy

Contain the statement of a national policy for the reduction of waste, focusing on source reduction, re-use and recycling of waste, as well as the proper disposal of residual waste. The policy should:

- * have the control of pollution and conservation of natural resources as its basis; and
- * take cognisance of and make allowance for the unique South African context within which the relevant waste legislation has been, and will be, formulated and applied.

2.2 Enabling legislation

Be the enabling legislation to deal with all facets of waste management on a national basis.

The legislation should deal with the generation of waste, its prevention, reduction, re-use and recycling, through its collection and, finally, to its disposal.

2.3 Separate sections

Contain separate sections for at least liquid, solid and hazardous wastes.

2.4 Specific guidelines/ regulations

Provide for the issue of more specific guidelines and/or regulations addressing:

2.4.1 the different types of waste, and

2.4.2 the various facets of waste management which are dealt with in the Act.

2.5 Universal applicability

Provide that the policy, guidelines and regulations are applicable to all levels of government when they deal with the issues raised therein.

2.6 Co-ordinating body

Ensure that a co-ordinating body exists to deal with the topic of waste, including the formulation and application of legislation pertaining thereto, on a national basis.

This body should be empowered to advise any member of government - at all levels - on the question of waste.

2.7 Standard terminology

Standardise waste terminology in all relevant legislation.

2.8 Standard approach

Standardise approaches to the various aspects of waste management.

2.9 Environmental education

Provide for the education of the public with regard to environmental issues, in general, and all aspects of waste, in particular.

There appears to be a special need to educate decision-makers whose decisions affect the environment, law enforcement officers and justice officials.

2.10 Data acquisition

Provide for the acquisition of data in respect of waste.

2.11 Protection of secrets

Provide for the protection of industrial and other trade secrets encountered in the course of waste management.

2.12 Sanctions

Incorporate positive, appropriate and uniform sanctions.

3. THE SECTION ON URBAN SOLID WASTE IN THE WASTE CONTROL ACT

The section of the Waste Control Act dealing with the issue of urban solid waste should, at least:

3.1 Waste managers: provisions

Provide for the education, training, qualifications, standards and control of waste managers.

3.2 Waste managers: assistance

Provide for institutional assistance to waste managers.

3.3 Waste management: privatisation

Provide that the option of privatisation of waste management can be exercised at a local level but that the local authority will still ultimately be responsible for such waste management.

3.4 Qualified persons

Provide that local authorities shall contract with properly qualified persons only in regard to waste management issues.

3.5 Level of responsibility

Make it clear at which level (national, regional or local) various issues (such as littering and dumping) should be dealt with.

3.6 Regulations

Be the vehicle for the publication of a "model" set of regulations relating to urban solid waste management. These regulations should be available for adoption by local authorities on a basis similar to that as provided for in the Atmospheric Pollution Prevention Act 45 of 1965.

3.7 Local waste policy

Provide that a local authority, in the event of it not having adopted the model set of regulations, must have a waste policy which is in conformity with the national policy set out in the Waste Control Act. Such local authority's policy must be referred to the co-ordinating body for approval.

3.8 Appeals

Provide for appeals by affected parties in respect of administrative decisions relating to the management of urban waste.

An example of such a decision is the refusal of a licence.

3.9 Accountability

Contain a recommendation as to who is to be accountable for the generation and/or disposal of waste.

Examples here of possible responsible parties are: the generator, the local or regional authority. This provision would assist in ensuring that environmental goods (such as use of the environment for the disposal of waste products) will be traded in the market place;

3.10 Waste prevention

Deal with the preventative side of waste management very specifically.

An example of such a provision is the granting of trading licences to secondary industries on condition that they separate their waste products in order to facilitate the re-use and recycling thereof.

3.11 Landfill regulations

Provide for the implementation of the proposed landfill regulations under the control of the Minister of Environment Affairs.

3.12 Waste reduction incentives

Provide incentives for voluntary waste reduction efforts.

Here bonds, grants, loans and tax incentives can be used to encourage the exploration of the economic and technical feasibility of source reduction (*vide* Gordon 1986 pp829,830);

3.13 Flexibility of standards

Allow for flexibility in the application of standards dependant upon local conditions.

4. FURTHER LEGISLATION should be enacted to:

4.1 Landfill sites: planning

Ensure that the land-use planning includes adequate provision for landfill sites. The registration of the land site as such in the appropriate Deeds Office should also be provided for.

4.2 Environmental Protection Agency

Establish an Environmental Protection Agency as a Central Government agency under the control of the Minister of Environment Affairs.

This agency could be charged with overall environmental policy and also ensure that environmental legislative provisions are undertaken and implemented (*vide* Malan, Rabie and Fuggle 1983 p132).

4.3 Environmental courts

Establish Environmental Courts - at all levels of jurisdiction - to deal with environmental matters, including transgressions of waste legislation. There should be provision for appeals, the award of costs and similar mechanisms to avoid abuse of the Court process.

4.4 Forum of experts

Create a forum of experts in which parties with conflicting interests on important issues can meet and reconcile their differences as far as possible before legislation is finally prepared in regard thereto.

This should be done in collaboration with the coordinating body.

CONCLUSIONS

With the formulation and presentation of the above guiding principles, I concluded that both the fifth objective as well as the overall objective of this study were achieved.

The overall conclusions, reached upon achievement of the fifth as well as the overall objective, are discussed in the next chapter. My recommendations, based upon this study, are also discussed in the following chapter.

CHAPTER 8

OVERALL CONCLUSIONS AND RECOMMENDATIONS

This final chapter looks at the overall conclusions reached and the recommendations made in the light of the study conducted.

OVERALL CONCLUSIONS

Upon achievement of the overall objective, I reached the following overall conclusions in regard to this study:

1. Existing and contemplated South African urban solid waste legislation :
 - * falls short of meeting the accepted criteria for good legislation;
 - * does not fulfil its functions in terms of its *raison d'etre*;
 - * does not achieve its objectives;
 - * does not promote implementation of the strategy for urban solid waste management.

2. South African waste managers
 - * are either not fully aware of, or lack concern for, South African urban solid waste legislation, and
 - * are, consequently, not using the legislation efficiently in their management of urban solid waste.

3. There is an absence of, and a need for, a discernible national waste policy.

4. There is a need for a comprehensive Waste Act to supplement, co-ordinate and consolidate all waste legislation in South Africa.
5. There is a need for clear objectives for South African urban solid waste legislation to be set.
6. Generally, South African urban solid waste legislation and its application need to be reformed.
7. Such reform would promote the implementation of South African urban solid waste management strategy.

BASES FOR OVERALL CONCLUSIONS

The above conclusions flow from the conclusions reached during the course of the achievement of the five specific objectives. These latter conclusions are summarised below:

The first objective: relevant legislation

The review of the South African legislation revealed that:

- a) there are numerous pieces of legislation dealing with urban solid waste on all levels of government;
- b) these pieces of legislation are of disparate origins and do not display standard approaches or provisions;
- c) there are several persons and bodies responsible for such legislation.

A review of the waste managers' responses to questions on issues of the legislation reflected a lack of awareness, or of concern, on the part of the majority of waste managers as to:

- a) the extent of the South African legislation which is relevant to their management of urban solid waste;
- b) why such legislation exists; and

- c) why they do or do not operate within such legislation.

The second objective: *raison d'etre* of and criteria for legislation

The *raison d'etre* of legislation assists clear thinking when evaluating legislation. It is thus essential to bear the functions of the *raison d'etre* in mind when formulating legislation.

The twenty six criteria which were established drew attention to the considerable amount of thought and effort which must be bestowed upon legislation to ensure that it can be classified as good legislation.

The third objective: evaluation of legislation

The evaluation of the legislation revealed that the legislature has made little provision for and, thus, inhibits:

- * the fulfilment of the functions of the legislation in terms of its *raison d'etre*, and
- * the achievements of the objectives of the legislation.

It would appear that the legislature has also failed to

- * set an acceptable objective for urban solid waste legislation at the outset, and
- * embody, in that legislation, a means which is logically related to achieving that objective.

The evaluation of the legislation also revealed that the legislature has not taken much cognisance at all of the twenty six criteria when promulgating urban solid waste legislation.

The fourth objective: waste managers' problems and solutions

The results of the survey of the waste managers confirmed that the relevant legislation:

- * lacks a base in the form of a national policy on waste;
- * is fragmented;
- * lacks co-ordination at central government level;
- * lacks clarity;
- * does not serve the larger South African society;
- * is generally poor enabling legislation.

The results of the survey also drew attention to those shortcomings of the legislation which inhibit effective urban solid waste management, namely:

- * the absence of structures to deal effectively with the formulation and administration of urban solid waste legislation;
- * the absence of uniform national by-laws for urban solid waste;
- * the absence of legislation addressing the question of the qualifications of waste managers and the standards for waste management;
- * the failure of the legislation to address the real problems such as
 - the education of society in regard to waste matters
 - the generation of waste
 - the reduction of waste
 - the separation of waste
 - the re-use and recycling of waste
 - the collection of waste;
- * the tardiness of the legislature in addressing the issue of the disposal of waste via appropriate legislation;
- * the difficulties being experienced by the waste managers in applying the legislation through the existing judicial system;
- * the lack of data on waste in general;

- * the absence of legislation to protect trade secrets encountered during the course of waste management.

The interviews with the waste managers produced some useful additional information in the form of details to proposed solutions as well as comments about urban solid waste management.

The conclusions reached at this stage of the project confirmed the perceived need to formulate guiding principles for the drafting of suitable South African legislation to promote

- * the fulfilment of the functions of urban solid waste legislation in terms of its *raison d'etre*, and
- * the achievement of the objectives of the legislation.

The fifth objective: guiding principles for suitable legislation

The overall objective was finally met with the formulation of the guiding principles.

Having completed this study, I decided to make recommendations for the reform of the South African urban solid waste legislation and its application. These recommendations are dealt with below.

RECOMMENDATIONS

Based upon the findings of this study, I recommend that:

1. The South African legislature implements the guiding principles proposed in Chapter 7 of this report in order to promote:

- * the fulfilment of the functions of the South African urban solid waste legislation in terms of its *raison d'etre*,

- * the achievement of the objectives of the legislation, and
- * the implementation of South African urban solid waste management strategy.

2. The South African legislature sets the following objectives for urban solid waste legislation in South Africa:

- 2.1 The reduction of the amount of urban solid waste produced.
- 2.2 The encouragement of the optimum use of that urban solid waste which is produced.
- 2.3 The encouragement of the proper disposal of residual urban solid waste.

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REFERENCE BIBLIOGRAPHY

- Adler E 1986 Chairman's Report to the Annual General Meeting of the National Committee to Co-ordinate Recycling on 20 November 1986
- Allen C K 1958 Law in the Making Oxford: Clarendon Press
- Barnard J J 1983 "Licencing in terms of the Act" in Solid Waste Bulletin September / October 11-13
- Barnard J J and Ball J M 1987 "The development of legislation and a philosophy on waste disposal for South Africa" A paper presented at the biennial conference of the S A Branch of the institute of Water Pollution Control in Port Elizabeth
- Benditt T M 1978 Law as Rule and Principle Stanford, California: Stanford University Press
- Boraiko A A 1985 "Storing Up Trouble...Hazardous Waste" in National Geographic 167, 3, 318-351
- Boukema H J H 1982 Good law: towards a rational lawmaking process Frankfurt am Main: Lang
- Bridgwater A V 1981 "Current status and Future Prospects for Refuse Management" in Bridgwater A V and Lidgren K (eds) Household Waste Management in Europe economics and techniques New York: Van Nostrand Reinhold 234-242
- Briscoe G E D 1983 "The resources and development of cleansing services in Soweto" in Municipal Engineer 38-42

Bruyns O 1987 Personal communication during interview at Sandton on 16 February 1987

Business and Marketing Intelligence (Pty) Ltd 1986 "The Recycling Potential of Packaging in Urban Waste In South Africa - Executive Summary - " A working document for inclusion in the Urban Waste Participants' Meeting held at the Palms Hotel, Silverton, Pretoria on 18 September 1986

Christie G C 1982 Law, Norms and Authority London: Duckworth

Council for the Environment 1985 "DEPOSIT LEGISLATION "The Pros and Cons"" Proceedings of a Workshop held at Johannesburg on 2 November 1985

Council for Scientific and Industrial Research 1986 "Draft guidelines for the effective disposal and control of solid waste" A product of a workshop organised by the National Research Programme for Waste Management, Foundation for Research Development, CSIR (Place and date of workshop not stated.)

Council for Scientific and Industrial Research 1987 "Recycling as a Waste Management Option" A product (Draft 3) of a workshop organised by the National Research Programme for Waste Management, Foundation for Research Development, CSIR held at the Wigwam Hotel, Rustenburg, 17-19 February 1987

Cowen D V 1987a "Governing a sectional title scheme" in Planning 91 May 25-33

- Cowen D V 1987b Personal communication during interview held at Cape Town on 8 July 1987
- De Bruin A C 1987(a) "Hazardous Waste Management in SOUTHERN AFRICA" in Forester W S and Skinner J H (eds) 1987 International Perspectives on Hazardous Waste Management London: Academic Press
- De Bruin A C 1987(b) "Legislation - a call for action in the waste management scene" A paper delivered at a seminar held by the Institute of Waste Management (Southern Africa) held at Bloemfontein on 8 and 9 October 1987
- De Kock R 1986 Garbage picking as a strategy for survival Durban: Development Studies Unit, University of Natal
- Douglas I 1983 The Urban Environment London: Edward Arnold
- Finch J D 1979 Introduction to Legal Theory London: Sweet and Maxwell
- Fuggle R F 1983 "Nature and ethics of environmental concerns" in Fuggle R F and Rabie M A (eds) Environmental Concerns in South Africa Cape Town: Juta & Co 1-8
- Fuller L L 1958 "Positivism and fidelity to law- a reply to Professor Hart" in Harvard Law Review 71, 4, 630-672
- Glazewski J 1986 "Conservation of private land by means of compensatory mechanisms and incentives." A dissertation submitted to the Department of Environmental and Geographical Science,

University of Cape Town, as partial requirement for the degree of Master of Arts.

- Gordon R G 1986 "Legal Incentives for Reduction, Reuse and Recycling: A New Approach to Hazardous Waste Management" in The Yale Law Journal 95, 810-831
- Gray P 1984 "Biology" in The World Book Encyclopedia Volume 2 Chicago: World Book, Inc. 246-246f
- Hart H L A 1958 "Positivism and the separation of law and morals" in Harvard Law Review 71, 4, 593-629
- Jones K 1986 "An investigation into the potential for an increase in the waste paper recovery rate from the solid-waste stream of the Cape Town central business district with particular reference to high-grade waste paper." A technical report presented to the Graduate School of Business, University of Cape Town in partial fulfilment of the requirements for the Master of Business Administration degree.
- Joubert C S W 1986 "Solid waste disposal and pollution control" in The Southern Africa Waste Management Journal 3, 3 pages
- Judais R S 1986 White South Africans' knowledge about, attitude towards, and practice in respect of the voluntary recycling of domestic solid waste. Pretoria: Human Sciences Research Council
- Kantorowicz H 1958 The Definition of Law Cambridge: University Press

- Lawrence J 1986(a) "Wastes management - Southern Africa" in The Southern Africa Waste Management Journal 3, 5 pages
- Lawrence R J 1986(b) "Developments in the Waste Industry - National and United Kingdom" A paper delivered at the National Congress of the Institute of Waste Management (Southern Africa) held at Cape Town in October 1986.
- Lord D A et al 1983 "Solid waste" in Fuggle R F and Rabie M A (eds) Environmental Concerns in South Africa Cape Town: Juta & Co 388-411
- Malan J G S, Rabie M A and Fuggle R F 1983 "Official administration of environmental affairs" in Fuggle R F and Rabie M A (eds) Environmental Concerns in South Africa Cape Town: Juta & Co 111-132
- Malan J J 1986 "Ekonomie stu afval" in Conserva 1, 1, 10, 11, 22
- Mc Gowan A 1984 "Environmental Pollution" in The World Book Encyclopedia Volume 6 Chicago: World Books, Inc. 260b-2601
- Mc Gregor L and Parish R 1985 "Resource Policy and Economic Efficiency: A Critique of 'Waste Reduction and Resource Conservation'." A paper of the Department of Economics, Monash University
- Miller R S 1984 "Ecology" in The World Book Encyclopedia Volume 6 Chicago: World Books, Inc. 37-38b
- New South Wales 1981 Waste Disposal Act, 1970, No. 97 New South Wales: Government Printer

- Noble R G 1976 "Solid wastes research in South Africa" in South African National Scientific Programmes Report No 4 Pretoria: Council for Scientific and Industrial Research
- Nurse R H, Symington N C, Brooks G R de V and Heyl L J 1976 "Recycling and disposal of plastics waste in South Africa" in South African Scientific Programmes Report No 6 Pretoria: Council for Scientific and Industrial Research
- Otto J F 1987 "The Disposal of Wastes into the Environment" in The Southern Africa Waste Management Journal 4, 14, 15 and 28
- Packaging Council of South Africa 1987 Update on E.E.C. submissions on E.C. directive on containers of liquids for human consumption (85/339/EEC) Sandton
- Palm H S 1983 Die bekamping van rommelstrooiing: 'n Literatuuroorsig Pretoria: Human Sciences Research Council
- Popkiss M E E 1986 "The waste manager and public health" A paper delivered at the National Congress of the Institute of Waste Management (Southern Africa) in Cape Town in October 1986
- Rabie A 1976 South African Environmental Legislation Pretoria: The Institute of Foreign and Comparative Law, University of South Africa
- Rabie A 1983(a) "Codification of environmental law and the Environment Conservation Act" in De Rebus The South African Attorneys' Journal 185, 235-238

- Rabie M A 1983(b) "Environmental Law" in Fuggle R F and Rabie M A (eds) Environmental Concerns in South Africa Cape Town: Juta & Co 30-81
- Rabin E H and Schwartz M D (eds) 1972 The Pollution Crisis Official Documents Dobbs Ferry, New York: Oceana Publications
- Raimondo J P 1986 "Urban solid wastes in the African environment" A paper delivered at an Africa Seminar held at the Centre for African Studies, University of Cape Town on 22 October 1986
- Republic of South Africa: Department of Water Affairs, Forestry and Environmental Conservation 1980 WHITE PAPER ON A NATIONAL POLICY REGARDING ENVIRONMENTAL CONSERVATION Pretoria: Government Printer
- Republic of South Africa: Department of Environment Affairs 1982 Present Status and a National Policy regarding Waste disposal in Republic of South Africa
- Ritchie M S E 1986 Regionalisation of Solid Waste Management Johannesburg: University of the Witwatersrand
- Rodgers W H 1977 Handbook on Environmental Law St Paul, Minnesota: West
- Smuts J C 1987 Holism and Evolution Cape Town: N & S Press
- Stauth R S 1983 "Environmental economics" in Fuggle R F and Rabie M A (eds) Environmental Concerns in South Africa Cape Town: Juta & Co 82-110

- Stone J 1946 The Province and Function of Law Sydney:
Associated General
- Todd J H 1986 "Waste Reduction: Industry's Challenge" in
Journal of the Washington Academy of Sciences
76, 1, 44-48
- Townshend P and Geldenhuis S 1987 "The Impact on Local
Authorities of the New Regulations on
Disposal of Solid Waste" in IMIESA 12, 1, 29
- United Kingdom: Trade and Industry Committee 1984 The
Wealth of Waste (Session 1983-84) (Fourth
Report) London: H M S O
- United Kingdom: Royal Commission on Environmental Pollution
1985 11th Report London: H M S O
- United States of America: Environmental Protection Agency
1977 Fourth Report to Congress: Resource
Recovery and Waste Reduction
- Van Rensburg D B J 1984 An objective review of the present
situation regarding solid waste generation,
recovery and disposal in South Africa 1983
Pretoria: Consultor Group (Pty) Ltd
- Vinogradoff P 1959 Common Sense in Law London: Oxford
University Press
- Watson A 1977 The Nature of Law Edinburgh: Edinburgh
University Press
- White P T 1983 "The Fascinating World of TRASH" in
National Geographic 163, 4, 424-457

Wiseman K and Raimondo J 1987 "Alternative Waste Collection Systems for Peri-Urban Areas" A paper of the Department of Environmental and Geographical Science, University of Cape Town

World Commission on Environment and Development 1987 Our Common Future Oxford: University Press

Zalob D S 1979 "Current Legislation and Practice of Compulsory Recycling: An International Perspective" in Natural Resources Journal 19, 611-628

ANNEXURE A

EXISTING AND CONTEMPLATED
SOUTH AFRICAN URBAN SOLID WASTE LEGISLATIONEXISTING NATIONAL LEGISLATION

1. Sea Shore Act, No. 21 of 1935
Sections 10(1)(d), 10(2), 11(2)
2. Advertising on Roads and Ribbon Development Act, No. 21 of 1940
Sections 8(1), (2), (3), (4), 15(1)
3. Rand Water Board Statutes (Private) Act, No. 17 of 1950
Section 139
4. Mines and Works Act, No. 27 of 1956
Sections 12(gA), (h), 17
5. Water Act, No. 54 of 1956
Sections 23(1)(a), (b), 26(b), (i),
170(2), (4)
6. Income Tax Act, No. 58 of 1962
Section 12(1)
7. Precious Stones Act, No. 73 of 1964
Section 125(n)
8. Medicines and Related Substances Control Act, No. 101 of 1965
Sections 23(2), 29(f), 30, 35(1)(vii), (xxvA),
(xxvi), (xxviA), (xxvii)

9. **Animal Slaughter, Meat and Animal Products Hygiene Act, No. 87 of 1967**
Sections 38(4)(n), (5)
10. **Physical Planning Act, No. 88 of 1967**
Sections 2, 6B, 11(1)(a), (b)
11. **National Roads Act, No. 54 of 1971**
Sections 16, 22
12. **Foodstuffs, Cosmetics and Disinfectants Act, No. 54 of 1972**
Sections 14, 15, 17, 18, 23, 24
13. **Sea Fisheries Act, No. 58 of 1973**
Sections 13(1)(j), (3), 16, 17
14. **International Health Regulations Act, No. 28 of 1974**
Sections 2, 3(1)(c)
Articles 14 (paragraph 3), 63 (paragraphs 1(b), 2) of the Schedule
15. **Lake Areas Development Act, No. 39 of 1975**
Section 23(1), (6)
16. **Financial Relations Act, No. 65 of 1976**
Section 11(1)(a)
Paragraph 24 of Schedule 2
17. **Health Act, No. 63 of 1977**
Sections 20(1), 33(1)(n), 34(1), 37(f), 38, 39, 40, 57
18. **South African Transport Services Act, No. 65 of 1981**
Section 60(m)
19. **Environment Conservation Act, 100 of 1982**
Sections 4, 12(2), (3), (4), (5), 13

20. Promotion of Local Government Affairs Act, No. 91 of 1983
Section 4
21. Forest Act, No. 122 of 1984
Section 75(3)(a)(vii), (9)(i), (12)
22. Regional Services Councils Act, No. 109 of 1985.
Sections 2, 3, 4, 5, 11A, 13
Schedule 2

CONTEMPLATED NATIONAL LEGISLATION

1. Notice in terms of Section 12(6) of the Environment Conservation Act, 1982 of intention to make regulations in terms of Section 12(2)(a) of the said Act relating to the control of the disposal of solid waste (Government Notice number 1549 dated 12 July 1985)
The whole.
2. Draft Bill on Environment Conservation (Government Notice Number 353 dated 29 May 1987)
Sections 1(xi), (xviii), (xxix), 2, 20, 21, 28, 33, 36, 37
The above Draft Bill was in existence when the personal interviews with the waste managers (referred to in Chapters 1, 2 and 6) were conducted.

The undermentioned Draft Bill was subsequently published and is listed here for its pertinence. It was, however, not discussed in any interviews for this project. There would, in any event, appear to be no significant differences in the content of the relevant sections of the two Bills.

3. **Draft Bill on Environment Conservation (Government Notice Number 798 dated 30 October 1987)**
 Sections 1(vii), (xv), (xxiv), 2, 19, 20, 24, 28, 29

EXISTING PROVINCIAL LEGISLATION

Transvaal

1. **Local Government Ordinance, No. 17 of 1939**
 Sections 79(1)(a), (2)(a), (b), 80(3), (4)(a), (b), (15), (37), (38).
2. **Roads Ordinance, No. 22 of 1957**
 Sections 34(1)(b), (c), (2), 58(1)(g), (2), (3), 99
3. **Road Traffic Ordinance, No. 21 of 1966**
 Sections 119(1)(m), 130, 131(8), 134, 180A(1)(c)
4. **Public Resorts Ordinance, No. 18 of 1969**
 Sections 28(1)(q), 29(1)(c), 37(1)(g), (q), (4)
 Regulations 32(1)(a), 38
5. **Nature Conservation Ordinance, No. 12 of 1983**
 Sections 99(3)(b), (4)(a), 102(1)(e), (4)
 Regulations 25(1)(e), 44(2)(b), 52(a)

Natal

1. **Town Planning Ordinance, No. 27 of 1949**
 Sections 40(1), (2), (3), 46, 77(1), (3), 78(1)(f)
 Regulation 3(a) of the Private Townships
 Regulations read with Paragraph 6(f)(ii) of the
 Schedule thereto
2. **Road Traffic Ordinance, No. 21 of 1966**
 Sections 119(1)(m), 130, 131(8), 134, 180A(d)

3. **Roads Ordinance, No. 10 of 1968**
Sections 23(1)(e), 73
4. **Nature Conservation Ordinance, No. 15 of 1974**
Sections 17(1)(a), (h)
Regulations 11(1)(b), (c), 13, 21 of the
Regulations for Control and Management of Game
Reserves, Nature Reserves and National Parks
5. **Local Authorities Ordinance, No. 25 of 1974**
Sections 266(1)(d)(iii), (vi), (xi), (i),
(t)(iii), (7), 335(2)(d)(iv)
6. **Prevention of Environmental Pollution Ordinance,
No. 21 of 1981**
The whole

Cape Province

1. **Road Traffic Ordinance, No. 21 of 1966**
Sections 119(1)(m), 130, 131(7), 134, 180A(d)
2. **Nature and Environmental Conservation Ordinance,
No. 19 of 1974**
Sections 82, 85, 86
3. **Municipal Ordinance, No. 20 of 1974**
Sections 186(22)(g), (h), 188(23)(a), (26), (27),
✓(36), (44), ✓(58), ✓(65), 213(1), (2), (3)
4. **Roads Ordinance, No. 19 of 1976**
Section 64(1)(c), (d), (2), (4)

Orange Free State

1. **Local Government Ordinance, No. 8 of 1962**
Sections 135(1)(a)(xi), 137, 146(11), (24), 147
2. **Road Traffic Ordinance, No. 21 of 1966**
Sections 119(1)(m), 130, 131(8), 134, 180A(1)(c)
3. **Roads Ordinance, No. 4 of 1968**
Sections 21(1)(b), (2), 54(a)
4. **Nature Conservation Ordinance, No. 8 of 1969**
Sections 38(1)(p), 40(1)
Regulations 17(1)(c), (k), (n)
5. **Dumping of Rubbish Ordinance, No. 8 of 1976**
The whole

EXISTING LOCAL AUTHORITIES' LEGISLATION

There are numerous pieces of legislation at this level of government. The following are examples of such legislation passed by some larger towns and cities:

1. **Municipality of Bloemfontein: Public Health By-laws and Sanitary Regulations promulgated in terms of Administrator's Notice 13 of 1936, dated 21 February 1936.**
2. **City of Pietermaritzburg: Refuse and Night Soil Removal By-laws promulgated in terms of Provincial Notice No. 59, 1967 dated 2 February 1967.**
3. **Port Elizabeth Municipality: Refuse Removal Regulations promulgated in terms of Provincial Notice 876/1970, dated 30 October 1970.**

4. Johannesburg Municipality: Refuse (Solid Wastes) By-laws promulgated in terms of Administrator's Notice 1037, dated 18 June 1975.
5. Borough of Vryheid: By-laws relating to Cleaning Services promulgated in terms of Provincial Notice No. 391, 1982, dated 26 August 1982.
6. Cape Town Municipality: Solid Wastes By-law promulgated in terms of Provincial Notice 127/1984, dated 13 April 1984.

ANNEXURE B**QUESTIONS POSED TO THE WASTE MANAGERS**

This Annexure sets out the questions which were posed to the waste managers during the personal interviews conducted with them. These questions were prepared in advance of the interviews and were sent to the waste managers some time before the interviews were conducted.

Question Groups 1 and 3 and the waste managers' responses thereto are discussed in Chapter 3. Question Groups 2 and 4 and the waste managers' responses thereto are discussed in Chapter 6.

The questions were:

GROUP 1. USE OF EXISTING LEGISLATION

- 1.1 There are several pieces of legislation in South Africa dealing with the question of solid waste. Within which particular pieces of the legislation have you operated during the course of your management of the urban solid waste stream in South Africa?
- 1.2 Why have you operated within the legislation mentioned by you?

GROUP 2. PROBLEMS IN RESPECT OF EXISTING LEGISLATION AND SOLUTIONS THEREFOR

- 2.1 In operating within the legislation did you experience any problems with it? If so, what were these problems?

2.2 Do you foresee any problems (including those already mentioned) in operating within the legislation in future? If so, what are these problems?

2.3 Do you have any solutions to propose for the problems experienced or foreseen by you? If so, what are your proposed solutions?

GROUP 3. LEGISLATION NOT USED

Is there any legislation dealing with the question of urban solid waste in South Africa of which you are aware and within which you have not operated? If so, why have you not operated within such legislation?

GROUP 4. OTHER PROBLEMS AND SOLUTIONS

Have you, in the course of your management of the urban solid waste stream in South Africa, experienced any other problems

4.1 which are not presently legislation-related; and

4.2 for which you have solutions which you believe should be incorporated in legislation?

If so,

4.3 what are these problems?

4.4 what are your proposed solutions?

ANNEXURE C

NAMES OF THE WASTE MANAGERS

Mr J M Ball	Waste Management Consultant, Johannesburg
Prof J R Bicheno	Head of Division of Industrial Engineering in School of Mechanical Engineering, University of the Witwatersrand
Mr A H Blumenthal	Deputy City Engineer, Cape Town Municipality
Mr C Boucher	Area Manager, Natal Waste-Tech (Propriety) Limited
Mr G E D Briscoe	Parks and Recreation Department, Johannesburg Municipality Former Manager of Parks and Cleansing, Greater Soweto
Mr W M Connor	Divisional Manager, Central Operations, Cleansing Branch, Cape Town Municipality
Mr A C de Bruin	Head, Cleansing Branch, Cape Town Municipality
Mr H Fairweather	Senior Engineering Technologist and Deputy Departmental Head, Cleansing Services, Sewerage Treatment and Waste Disposal, Bellville Municipality

Mr N Futter	Technical Manager, Republic of South Africa Waste-Tech (Propriety) Limited
Mr E Hall	Consulting Engineer Former City Engineer, Johannesburg Municipality
Mr R J, Lawrence	Consultant Former Chief Cleansing Officer, Port Elizabeth Municipality
Mr R Lombard	Waste Management Consultant Waterfall, Natal
Mr G Lord	Senior Civil Engineer (Disposal), Cleansing Branch, Cape Town Municipality
Mr J J Malan	Coordinator, National Research Programme for Waste Management, Foundation for Research Development, Council for Scientific and Industrial Research
Mrs J Marsh	Chief Cleansing Officer (North), Johannesburg Municipality
Dr W M Matsie	Assistant Medical Officer of Health for Johannesburg and Soweto with responsibility for cleansing in Soweto
Mr M Nhlapo	Superintendent, Cleansing, Greater Soweto (Interviewed in conjunction with Dr W M Matsie)

Mr D Truscott

Assistant City Engineer (Services),
Durban Municipality

Mr S J Verrier

Deputy City Engineer (Cleansing),
Johannesburg Municipality

ANNEXURE D**RESPONSES BY THE WASTE MANAGERS
ON ISSUES OF WASTE LEGISLATION**

This annexure is a record of responses by the waste managers to the following questions posed to them during the personal interviews:

QUESTION GROUP 1 : USE OF EXISTING LEGISLATION

- 1.1 There are several pieces of legislation in South Africa dealing with the question of solid waste. Within which particular pieces of the legislation have you operated during the course of your management of the urban solid waste stream in South Africa?
- 1.2 Why have you operated within the legislation mentioned by you?

QUESTION GROUP 3 : LEGISLATION NOT USED

Is there any legislation dealing with the question of urban solid waste in South Africa of which you are aware and within which you have not operated? If so, why have you not operated within such legislation?

These responses are not reflected in either the summaries in Chapter 6 or in the guiding principles in Chapter 7. They are, however, discussed at the end of Chapter 3, from page 35 onwards.

The waste managers have been listed in this Annexure in the sequence in which the interviews were conducted. They have not been listed in this Annexure in the same sequence as they are listed in Annexure C. For the sake of confidentiality each waste manager has each been allocated a letter of the alphabet.

MANAGER A

Q 1.1

Local by-laws

Act 36 of 1947 (re: compost)

Q 1.2

To control generators of waste.

Q 3

None.

MANAGER B

Q 1.1

Municipal Ordinance 20 of 1974

Criminal Procedure Act 51 of 1977

Various Municipal by-laws and regulations.

Q 1.2

To combat littering and dumping and to promote change in behavioural pattern of the public.

Q 3

Trespass of Cattle and Animals Ordinance 18 of 1939 - due to there being no municipal pound.

MANAGER C

Q 1.1

Health Act 63 of 1977

Municipal by-laws

Section 341 of Act 51 of 1977

Q 1.2

Earlier regulations were inadequate - did not address the issues. New regulations lead to easier management and improved standards of waste management and living.

Q 3

Cannot recall any such legislation.

MANAGER D

Q 1.1

All relevant legislation : 22 Acts, various Ordinances and numerous by-laws.

Q 1.2

Employer company considers itself leader in the field of waste management and it is very important that the company complies with all legislation.

Q 3

None.

MANAGER E

Q 1.1

All relevant legislation from national to local but particularly :

- * Water Act
- * Environmental Conservation Act
- * Physical Planning Act
- * Hazardous Substances Act.

(Also proposed regulations in respect of landfill sites.)

Q 1.2

Because it is necessary and they are useful pieces of legislation.

Q 3

None - operated within all.

MANAGER F

Q 1.1

None except Health Act.

Has adopted principles of proposed regulations for landfill sites.

Q 1.2

Because of moral obligation - for environmental stability, for future generations and because it is the right thing to do.

Q 3

Not aware of any.

MANAGER G

Q 1.1

Health Act

Adjacent city's health regulations and refuse by-laws.

Q 1.2

Because it was the applicable legislation.

Q 3

* Fencing of landfill sites in terms of health regulations - because the fences were cut down.

* Proposed landfill regulations - because there are no suitable landfill sites.

MANAGER H

Q 1.1

Health Act

Q 1.2

Because it is enabling legislation.

Q 3

- * Environment Conservation Act, No. 100 of 1982
- * Ten to fifteen smaller pieces of legislation which are "hidden" in various Acts
- * Proposed landfill regulations

MANAGER I

Q 1.1

Local Government Ordinance
Municipal By-laws
Health Act
Environment Conservation Act
Water Act 54 of 1956

Q 1.2

Waste manager has to undertake his job, perforce, within a legal framework upon the advice of legal counsel.

Q 3

None, except landfill regulations (but has operated in terms of the concepts for some time).

MANAGER J

Q 1.1

Municipal by-laws
Water Act
Atmospheric Pollution Prevention Act

Q 1.2

Because it fits in with the technology or "gut-feeling" practice of waste management.

Q 3

Unable to comment.

MANAGER K

Q 1.1

Municipal by-laws
Health Act
Water Act

Q 1.2

That is all that was available.

Q 3

Not aware of any other legislation.

MANAGER L

Q 1.1

All 22 Acts, but especially :

- * Environment Conservation Act
- * Health Act
- * Water Act
- * Occupational Safety Act
- * Factories Act.

All Road Transportation Ordinances
Various municipal by-laws.

Q 1.2

Because :

- * it is legislation and the company is compelled to operate within it
- * there are many objectives and points in the legislation with which the company wholeheartedly agrees
- * of the company's moral responsibility *vis a vis* hazards.

Q 3

Have operated within all known legislation.

MANAGER M

Q 1.1

Health Act

Water Act

Atmospheric Pollution Prevention Act

Machinery and Occupational Safety Act

Financial Regulations Act

Provincial Ordinances (various)

Q 1.2

Because they are the best that exist - they are there, we use them.

Q 3

None

MANAGER N

Q 1.1

Health Act

Occupational Safety Act

Water Act

Proposed landfill regulations in terms of the Environment
Conservation Act

Adjoining local authority's by-laws

Q 1.2

The Acts are applicable to the operations and the management of the area.

Q 3

None

MANAGER O

Q 1.1

Municipal by-laws

Water Act

Atmospheric Pollution Prevention Act

Noise Act(?)

Mines and Works Act

Proposed landfill regulations

Q 1.2

By-laws : Because they were there, had to be adhered to and the best way to operate was in terms of the by-laws.

Acts : The motivation for research for a technical base was "the environment is at risk". The research fitted into the legislative framework. Also he went ahead and managed, and certain aspects of the legislation fitted in with the management.

Landfill regulations : With an environmental consciousness and just by working within the environment, one is working within the regulations.

Q 3

None

MANAGER P

Q 1.1

Municipal by-laws

Local Government Ordinance

Q 1.2

"That's all we had."

Q 3

None

MANAGER Q

Q 1.1

Municipal Regulations

Health Act

Hazardous Waste Act

Water Act

Proposed landfill regulations

Q 1.2

It fitted in with practice.

Q 3

None

MANAGER R

Q 1.1

Atmospheric Pollution Prevention Act 1965
 Medicine and Related Substances Control Act 1965
 Foodstuffs, Cosmetics and Disinfectants Act 1972
 Dumping at Sea Control Act 1956
 Mines and Works Act 1956
 Nuclear Installations Act 1963
 Precious Stones Act 1964
 Mining Rights Act 1967
 Atomic Energy Act 1967
 Agricultural Produce Export Act 1971
 Fertilizers, Farm Feeds and Agriculture Remedies and Stock
 Remedies Amendment Act 1977
 Sea Fisheries Act 1973
 Merchant Shipping Act 1973
 Prevention and Combating of Pollution of the Sea by Oil
 Act 1971
 Marine Traffic Act 1981
 Sea Shore Act 1935
 Physical Planning Act 1967
 Water Act
 Health Act
 Environmental Conservation Act (proposed landfill
 regulations)
 Municipal Ordinance
 Municipal By-laws

Q 1.2

"We have to behave responsibly."

Rules are made for a certain reason and have not found any applicable laws to be unreasonable.

Fits in with the philosophy of public servants: "We have to look after the public."

Q 3

None

ANNEXURE E

**COPY OF LETTER TO THE WASTE MANAGERS
WITH QUESTIONS**

follows hereafter

NOTE: The title of the study was subsequently changed from:

"A review of South African Legislation with a view to
facilitating the management of the urban solid waste
stream."

to:

"South African urban solid waste legislation and its
application: proposals towards reform."



LB/hmk

9 June 1987

Department of Environmental and Geographical Science

University of Cape Town · Private Bag · Rondebosch 7700
Telephone: (021) 650-2873/4 · Telex: 5-22208
Fax: (021) 650-3726

Dear

INTERVIEW : URBAN SOLID WASTE MANAGEMENT

I refer to our recent telephone discussion and thank you for affording me the opportunity to interview you in regard to the above topic. I confirm that we are due to meet at your offices at on .

As mentioned to you, I am at present reading for a Master of Arts degree in Environmental Science in the Department of Environmental and Geographical Science at the University of Cape Town. For this purpose, and in conjunction with the Council for Scientific & Industrial Research (under the Council's National Research Programme for Waste Management), I am undertaking research for the topic "A review of South African Legislation with a view to facilitating the management of the urban solid waste stream". The interview with you will form part of this research which, I trust, will be a contribution towards more efficient waste management in South Africa.

Broadly, two of the objectives of this research are:

1. To ascertain the problems experienced or foreseen by waste managers in operating within the existing legislation.
2. To ascertain the waste managers' proposed solutions to these problems.

Consequently, the questions which I wish to pursue with you are those set out in the annexure hereto. I should just mention that I am dealing with urban solid waste which is disposed of on the ground (as opposed to in water or in the air). I am also not dealing with hazardous waste. Further, the prime (but not sole) area of concern is source management and source reduction.

With your permission I propose recording the interview which, I anticipate, should not take more than one hour.

Should you encounter any difficulties please telephone me at home (as a first choice) at 021-641529 or at UCT at 021-650-2872.

Your co-operation in and contribution towards this research is much appreciated.

I look forward to our meeting.

Yours sincerely

Llewellyn Botha

ANNEXURE F

**COPY OF LETTER TO THE WASTE MANAGERS
WITH SUMMARISED ANSWERS**

follows hereafter



Department of Environmental and Geographical Science

University of Cape Town · Private Bag · Rondebosch 7700
Telephone: (021) 650-2873/4 · Telex: 5-22208
Fax: (021) 650-3726

9 October 1987

Dear

INTERVIEW : URBAN SOLID WASTE MANAGEMENT

I refer to the interview which I conducted with you earlier this year and wish to report back to you upon it.

I have listened to the recording of our interview and have distilled out of it what I understand to be your answers to the questions posed by me - as well as any comments by you.

I am now in the final stages of preparing the report for the Council for Scientific and Industrial Research and enclose herewith a copy of the "distillation" of your answers and comments which I propose to include in such report. I also enclose a copy of the set of questions which I posed to you.

You will note that, for the sake of anonymity in the report, you have been allocated a letter of the alphabet.

I may just point out that:

a) some of the answers which you gave for Question 4, as well as some comments which you may have made elsewhere, may well have been included by me under Question 2 or vice versa;

and

b) some "problems" may have been inserted by me where "solutions" only were given by you.

This was done in order to make the report, as a whole, more orderly and readable.

Should you disagree in any manner or form with the enclosed "distillation" please advise me immediately. In this regard you may telephone me at home (as a first option) at 021-641529 or at the University of Cape Town at 021-650-2872 or, better still, write to me at the above address.

Should I not hear from you to the contrary by 29 October 1987 I shall presume that the "distillation" in question correctly reflects your views upon the issues raised by me and as discussed in our interview.

I anticipate that my final report will be delivered to the CSIR by the first quarter in 1988 and that copies will be available from the CSIR thereafter.

Thank you once again for your co-operation.

Yours sincerely

Llewellyn Botha

ANNEXURE G

NAMES OF THE JURISTS

The persons whose names are marked with an asterisk(*) are persons knowledgeable in the fields of both law and environmental conservation.

Mrs B J Clark	Assistant Lecturer, Department of Roman and Comparative Law, University of Cape Town
Prof H Corder	Head, Department of Public Law, University of Cape Town
Mr Justice M A Diemont*	Retired Judge of Appeal Supreme Court of South Africa
Mr P D Glavovic*	Lecturer, Department of Private Law, University of Natal, Durban
Mr J I Glazewski*	Research Officer, Department of Public Law, University of Cape Town
Prof F J van Zyl	Head, Department of Private Law, University of Port Elizabeth

ANNEXURE H**PROPOSED RAISON D'ETRE OF
AND CRITERIA FOR LEGISLATION****1. LEGISLATION: RAISON D'ETRE**

- 1.1 To prescribe the external conduct of society (referred to as the "Command");
- 1.2 To provide for the constraint (the ultimate usually being physical constraint) in the event of non-compliance (referred to as the "Sanction").

2. CRITERIA FOR ANY GOOD LEGISLATION

- 2.1 Valid (i.e. when its reasoning necessarily flows from its premises)
- 2.2 Solid (i.e. when its derivation basis is non-contradictory)
- 2.3 Socially needed / copes with a real problem
- 2.4 Socially conscious
- 2.5 Correctly timed
- 2.6 Equitable / balanced / of general application
- 2.7 Acceptable
- 2.8 Possible
- 2.9 Clear

2.10 Consistent within itself

2.11 Prospective

2.12 Avoids unintended consequences

2.13 Justiciable

2.14 Congruent in respect of official action and
declared rule

2.15 Properly promulgated

2.16 Flexible

2.17 Efficient

2.18 Economic

2.19 Constant through time.

3. ADDITIONAL CRITERIA FOR GOOD SOLID WASTE LEGISLATION

3.1 The legislation should achieve a balance between:

- economics, health and development;
- justice and effectiveness;
- public and private interests.

3.2 The legislation should:

- be holistic in approach;
- provide for minimum impact upon the environment;

- minimise health-related risks;
- compensate for market failures;
- be comprehensive;
- be sustainable in both the short and long terms.

ANNEXURE I

RESPONSES FROM THE JURISTS

This Annexure contains a record of the answers and comments, in condensed form, of the jurists given during the course of the personal interviews conducted with them. The proposed *raison d'etre* of and criteria for legislation upon which the jurists were requested to comment are set out in Annexure H.

The jurists have been listed in this Annexure in the sequence in which the interviews were conducted. They have not been listed in the same sequence in which their names are listed in Annexure G. For the sake of confidentiality each jurist has been allocated a letter of the alphabet.

JURIST A

Proposals 1.1 and 1.2: *raison d'etre*

* Believes the statements are too formalistic and with too much stress upon the "command" and the "constraint", that is, the "duty" side. "The law is much more than placing a lot of duties upon somebody."

* "What the law wants to do is to give you a protected area in which you can be a human being. For this reason it bestows rights upon you."

* Sees the function of the law as follows:

- to give you an area where man can "outlive" his potential;
- to protect this area.

The duty side of the law is placed on society not to enter that protected area.

- * The proposals lay too little stress upon the positive side, that is, what you are entitled to do. "You should not define the law in only the duties, because you are then on the negative side of the law."
- * "Constraint is necessary because of the sinful condition of Man."
- * Proposal 1.1 does not prescribe what you may do within the area, that is, your freedoms or rights.
- * Proposal 1.2 lays stress upon the "outside" person who the law does not want to come into the area. It does not pinpoint the position within the sphere of protection in which there are freedoms and the like. It is too negative.
- * It is important to note that the interest of the "protected one" must be weighed up against the interests of those outside the area (namely, society) and the interest of the would-be violator. The protection always consists of a weighing up of interests.
- * It can also be said that law is an instrument for the solving of conflicts. This is done through the weighing up of interests and the balancing thereof. There can be a gap in the law which can be filled by legislation.
- * In private law there is always: me, you and the community.
- * A function of the law is to eradicate conflicts by balancing interests. This the legislature does by making rules - and this is what Proposal 1.1 partially states.

Proposal 2: criteria: any good legislation

2.4 It means that social needs must be taken into account.

2.6 A good legal rule must always be able to accommodate the exception. You cannot generalise in the law too much as then you will get injustice. But bear in mind that "equals must be treated equally but unequals must be treated unequally."

2.7 "Good." One of the bases for good law is the legal consciousness of the community. If a legal rule is based in the legal consciousness of the community, there will be much more obedience than in a case where the law has been thrust from the top. It stems from moral values.

2.11 Prospectiveness is not always necessary.

2.12 "Good." The draughtsman must:

- a) have a good feeling for the language;
- b) have a very clear view of what he wants to regulate;
- c) have a very good imagination in respect of what is going to happen;
- d) know all the rules of interpretation of statutes, especially presumptions.

2.17 Not a criterion - it is a result.

2.18 Yes, in the broad sense - the least input to obtain the maximum output.

2.19 Bear in mind the need for *ad hoc* law.

Comment:

When writing on criteria one must always take the exception into account.

JURIST BProposals 1.1 and 1.2: raison d'etre

* In simplistic terms, and in summary, he agrees with Proposal 1.1. Agrees that law should also prescribe or establish the rights of what people should be entitled to, as opposed to a purely negative controlling of what they should not do.

* Agrees entirely with Proposal 1.2 - "it is the other side of the coin, it is a corollary to the prescription". Obviously there must be enforcement, criminal sanctions / penalties.

Proposal 2: criteria: any good legislation

Agrees with the points made. It is a pretty comprehensive summary of the criteria. There is not a great deal he can add to the parameters. He concedes that each one of those criteria has implicit arguments.

Proposal 3: criteria: good solid waste legislation

* Have touched on the most important criteria.

* "I agree entirely that the additional criteria as you have stated them in this document before me are sufficient for the purposes."

* "Generally speaking, the propositions which you have outlined here are acceptable to me with the emphasis upon the environment and social implications."

* "Within the South African context it may well be that the one community should assume a greater responsibility in respect of less affluent communities which might be in the

same region "... (should each community be obliged to dispose of its own waste).

Comments:

* "I wish to emphasize ... that I tend to the view that waste should be more comprehensively dealt with by the legislature. I tend to the view that there should be a specific statute dealing comprehensively with waste and then regulations which have the particular advantage in that

* they can be amended more easily,

* they can be promulgated more speedily,

* they can deal with *ad hoc* situations more efficiently than legislation which has to go through the whole legislative process. Regulations can be more specific in regard to particular areas, particular types of waste, particular regulations in regard to composting practices, hazardous waste disposal, categories of sites, and so on. I am of the very definite opinion that there should be a specific statute."

* "It seems to me to make sense to draft a statute with separate chapters - a comprehensive waste statute with a holistic, comprehensive approach does have appeal. Regulations are to be applied as in the Atmospheric Pollution Prevention Act - bearing in mind the differences in the country - and therefore an *ad hoc* approach to problems as they are perceived. The more general you make the statute, the less effective it is going to be in a local situation - so it must obviously be followed through with the prescription for the establishment of regulations for the separate problem areas."

* "If a comprehensive waste statute were to emerge, then I think that one of the issues which should be addressed is the siting of disposal areas. It is in the national interest that there should be control of the planning aspect. One of the big problems of controlling the waste

stream is to find acceptable sites - "less favoured" members of the community tend to have sites foisted upon them. This is a planning problem which should be accommodated in legislation."

* "For solid waste legislation there should at the very least be a policy statement"

* Would like to see legislation which has "the potential for educating and guiding society towards the adoption of a more environmentally oriented ethos or ethic."

* "The other possible aspect which is of concern to me is that it should be clearly emphasized that it is the obligation of each community to dispose of its own waste."

* "Another point - a regional approach would probably appear to be more desirable RSC's will be a forum for such an approach."

JURIST C

Proposals 1.1 and 1.2: *raison d'etre*

Agrees with them but not with reference to "command" or "sanction" because it is assuming a Justinian command theory of law (which is disputed). Thus agrees with the pure statements.

Also agrees that the law could also be seen as bestowing individuals with rights. Does not see Proposal 1.1 as "one-sided" prohibition, but also bestowing certain powers.

Proposal 2: criteria: any good legislation

2.1 Sees "valid" as merely proper procedures - passing through Houses of Parliament.

2.2 Suggests "non-contradictory".

2.6 Criteria not the same - suggests "of general application", "complying with the principles of natural justice", "like cases alike".

2.17 Possibly a result.

Remainder: Agrees.

JURIST D

Proposals 1.1 and 1.2: *raison d'etre*

* Sees "law" as the rules which govern the conduct of a community and which are established by authority or custom. Statute law is a division of law. It is necessary to have statute law because society is so complex. Thus it is necessary to bring the law up to date.

* Agrees that Proposals 1.1 and 1.2 are correct if seen in the context of criminal law. They would not necessarily be applicable in civil law because there is no provision for "sanctions" in civil law. Believes that nine tenths of research area would fall within the criminal aspects.

Proposal 2: criteria: any good legislation

* Suggests following criteria:

1. The legislative machinery must be complied with.
2. The law must be promulgated. (Thus agrees with 2.15)
3. Must be clear and unambiguous. (Thus agrees with 2.9)
4. Enforcable. (Agrees with Justiciable as in 2.13)
5. Must be sanction - must be effective - not too light or too severe - balanced.

6. Acceptable - approved by the majority of the citizens for the benefit of the country as a whole. (Thus agrees with 2.7)
7. Impartial. (Thus agrees with 2.6).

* Also agrees with 2.5, 2.10, 2.11, 2.12, 2.14 (but this one is not critical), 2.16, 2.17 and 2.18.

* Does not think 2.19 is a criterion.

Proposal 3: criteria: good solid waste legislation

* Suggests following criteria:

1. Any solid waste legislation must be practical.
2. It should be effective so that it really does reduce the solid waste stream.
3. It should be economical.
4. It should be fair and impartial. (Here agrees with "public and private interests" in 3.1.)
5. It should be balanced - as in 3.1.

*Agrees with 3.2 except:

- cannot agree that market failures should be supported as private enterprise should do this, not legislation or the Government;
- does not believe that "sustainable in both the short and long terms" is a criterion.

Comments

* Have got to educate people about dumping, and the like, before you can impose sanctions.

* Sanctions must be equitable, flexible and not oppressive.

* Agrees with community service in principle but believes that it could be difficult to implement.

JURIST EProposals 1.1 and 1.2: raison d'etre

- * "I go along with them completely."
- * "My initial reaction was that (Proposal 1.1) prescribes positive conduct whereas you would also want to cover the situation where you want to prohibit certain conduct ... but you can read that into it."
- * Proposal 1.1 can prescribe the requirements for a valid marriage.
- * "I have no problem with (Proposal 1.2)."
- * "I think that the way (Proposal 1.2) has been worded will cover the civil side as well (as the criminal side of law).

Proposal 2: criteria: any good legislation

- * Agrees with all the criteria.
- * Has the following comments in regard thereto:
 - 2.3 Can add: "Must be subject to review because societal demands and conditions change and so do problems."
 - 2.6 Saw: "equitable" as being in regard to conflicting interests which must be balanced;
 - : "of general application" as being in regard to geographical areas and across society.
 Suggests: "equitable" should be split and put with "balanced";
 - : "of general application" should be separate.
 - 2.17 Thinks "effective" would be more appropriate.

2.19 It is a valid point. Law is based upon certainty but it must not be adhered to at the expense of being rigid. Certainty makes for the law being effective. Suggests it being qualified by saying "subject to it not being too rigid - to change with time and society - ties up with 2.4 and 2.16.

Proposal 3: criteria: good solid waste legislation

* Feels that ecological / environmental considerations should be included with economics, health and development in Proposal 3.1.

* Agrees with 3.2 with following comments:

- "comprehensive": This must be qualified: for example, "It must deal with waste from its production, through collection, to disposal."
- "compensate for market failures": The market cannot cater for the whole spectrum of society's needs. There are certain public goods which the market cannot provide, for example, a Defence Force or the elimination of waste.

JURIST F

Proposals 1.1 and 1.2: raison d'etre

* They are "precisely and well-formulated - exactly what legislation is intended to achieve."

* Importance of legislation has grown over the last one hundred years or so. "The adaptability of government in a technologically rapidly-changing society ... , probably since the Second World War, ... necessitates increasing legislation at all levels of government on a public basis in order to regulate."

* "The South African legal system, to a large extent, in the approach and rules of public law, is inherited from the English legal system as opposed to the Roman-Dutch system.

The English legal system proceeds from the point of view that the citizen or inhabitant of the State has all rights - inherent in the individual - until removed by the State. Whereas the American or West European type of approach is that the citizen has no rights until granted by the State. This also a socialist approach."

* "I think that (Proposals 1.1 and 1.2) would be accurate from a technical point of view. At least, in theory, the South African legal system says that we have all rights to do what we want to do with our land - abuse it and pollute it - until the State stops us. Therefore all South African legislation is characterised by the taking away of rights. The presumption should be that (the citizens) are entitled to do as they please."

* The proposals are based upon the doctrine of parliamentary sovereignty. If a Bill of Rights comes into being, then a slightly different approach would have to be adopted. He does not think that things will change from the present position in South Africa - not substantially, in any event.

* "Legislation can be seen as a means of social control in the hands of the rulers of the country. It enforces policy and makes peoples' behaviour conform to certain norms."

* "It also provides a means, or an opportunity, for an individual to limit or contest the exercise of power through the legal process in a peaceable manner. It plays a crucial role."

* "There are arguments raging in the West European / Marxist field at the moment about how one should regard law and legislation. Does one regard it as it clearly is: as a tool in the hands of those who govern in order to enforce

their policy? Is it therefore an unremitting evil or / and on the other hand , does it not at the same time provide that kind of space in which the individual / ordinary citizen can fight for his rights?"

* "Some legislation meets a social need, other legislation meets the needs of the policy of the rulers. There are thus two possible sources of the need for legislation. For the first need, legislation is a sine qua non."

Proposal 2: criteria: any good legislation

* "These nineteen points as they are here really cover the field. I really racked my brains to find additional ones - I couldn't."

* "2.6 'treating like cases alike' is an important requirement but clearly within limits. It is not a good substitute for 'equitable' because 'equitable' would be weighing up the equity of the case, weighing up the pros and cons and giving a reasonably fair decision. I would go with those (as they stand).

* "The concept of reasonableness is included in several (criteria). It is an overvouching concept which would include things such as 'socially conscious', 'acceptable' and 'equitable' ... They ultimately add up to 'reasonableness'."

* "If you can get a piece of legislation that complied with all these requirements, it would be a wonderful piece of legislation. This is the 'suma' or ultimate in good legislation - especially the socially conscious, socially needed and equity. They are factors which are very often understressed in legislation in South Africa."

* "Equity (is), of course, ... a concept which is unknown to South African law except through the English law. It does

not flow from the Roman-Dutch basis - it has a very specific technical meaning."

* He suggests:

- could perhaps roll some criteria into one: for example, "socially needed" and "socially acceptable", although one does come before the other;
- "properly enacted" should be added to "properly promulgated";
- a wide-spread process of consultation which could fall under the "socially needed / acceptable" heads.

ANNEXURE J

COPY OF LETTER TO THE JURISTS
WITH PROPOSALS AND SOUTH AFRICAN CONTEXT

follows hereafter

NOTE: The title of the study was subsequently changed from:

"A review of South African Legislation with a view to
facilitating the management of the urban solid waste
stream."

to:

"South African urban solid waste legislation and its
application: proposals towards reform."



LB/hmk

29 May 1987

Department of Environmental and Geographical Science

University of Cape Town · Private Bag · Rondebosch 7700
Telephone: (021) 650-2873/4 · Telex: 5-22208
Fax: (021) 650-3726

Dear

INTERVIEW : URBAN SOLID WASTE MANAGEMENT

I refer to our recent telephone discussion and thank you for affording me the opportunity to interview you in regard to the above topic. I confirm that we are due to meet at your offices at on .

As mentioned to you, I am at present reading for a Master of Arts degree in Environmental Science in the Department of Environmental and Geographical Science at the University of Cape Town. For this purpose, and in conjunction with the Council for Scientific & Industrial Research (under the Council's National Research Programme for Waste Management), I am undertaking research for the topic "A review of South African Legislation with a view to facilitating the management of the urban solid waste stream". The interview with you will form part of this research which, I trust, will be a contribution towards more efficient waste management in South Africa.

Three of the objectives of this research are:

- a) To ascertain the "*raison d'etre*" for legislation,
- b) To ascertain the generally accepted criteria for any good legislation,
- c) To ascertain the generally accepted criteria for good solid waste legislation in the South African context.

Consequently, the questions which I wish to pursue with you are the following:

1. "Raison d'etre" for legislation

Why does society require legislation?

2. Criteria

- 2.1 What do you believe to be the generally accepted criteria for any good legislation?
- 2.2 What do you believe to be the generally accepted criteria for good solid waste legislation in the South African context?

Whilst I appreciate that each of these questions could be the topic for a doctoral thesis, I am endeavouring to keep the issues as simple as possible. With this in mind, I have prepared "model" answers to the questions as per the annexures hereto. I would merely like to ascertain from you whether or not you agree with the answers and, if not, what your alternatives are.

I have also attached details of the essential elements which I believe should be taken into account when considering the "South African context" in Question 2.2.

With your permission I propose recording the interview which, I anticipate, should not take more than one hour.

Should you encounter any difficulties please telephone me at home (as a first choice) at 641529 or at UCT at 650-2872.

Your co-operation in and contribution towards this research is much appreciated.

I look forward to our meeting.

Yours sincerely

Llewellyn Botha

ANNEXURE K**COMMENTS BY THE WASTE MANAGERS**

This Annexure is a record of comments made by the waste managers during the course of the personal interviews conducted with them. The comments are not reflected in either the summaries in Chapter 6 or in the guiding principles in Chapter 7.

The waste managers have been listed in this Annexure in the sequence in which the interviews were conducted. They have not been listed in this Annexure in the same sequence as they are listed in Annexure C. For the sake of confidentiality each waste manager has been allocated a letter of the alphabet. As some waste managers did not make comments which fell to be classified for inclusion in this Annexure, those waste managers are not mentioned in the annexure.

MANAGER C

* The Institute of Waste Management can play a role in co-ordinating the supervision of waste on a national basis.

MANAGER D

* Source separation at domestic level is essential for recycling.

MANAGER E

* The main problem in waste management is the private/public sector distrust - for which you cannot legislate.

* "Tip picking":

- does help recycle plastic;
- gives source of income;
- is already regulated in terms of Factories Act and

Public Health Act;

- pickers cannot be kept away.

* Black townships:

- contain much recyclable material such as plastic bags;

- proposes Black entrepreneurs should be encouraged through economic incentives to collect for recycling purposes.

* A problem is lack of knowledge, education, training and competency of people in the waste industry - for which it is difficult to legislate.

MANAGER F

* "Garbage picking" - does not support legislation either for or against this practice.

* Separation at source:

- agrees therewith if there is going to be recycling;

- sees no problem from management point of view;

- suggests colour-coding of bins;

- non-putrescibles would only need to be collected approximately once per month.

MANAGER G

* Does not think that source separation will work in Black areas - for several reasons, mainly arising from cultural beliefs.

* Thinks that there is sufficient legislation for the day-to-day management of waste and that there is no need for a single Act for waste.

* Believes that, in future, local authorities will still be responsible for collection and that regionalisation will deal with transfer stations and landfill sites only - with the Health Act governing as "the bottom line".

* Thinks that privatisation is a good thing but that it requires policing.

* Believes in as little legislation as possible.

MANAGER I

- * His experience has been that solid waste managers have not been aware of the several Acts touching on the question of solid waste but have had reference to a legal adviser when a specific problem has been encountered.
- * Legislation did not, in the past, loom large for the waste manager. It is only now becoming apparent that there are environmental and health hazards. Waste managers (particularly engineers) see it as a technical problem to be overcome and it is apparent that some legislative control is necessary to support the technical side.
- * He would prefer education as opposed to criminal sanctions but agrees that there should be "a stick behind the carrot".
- * Regionalisation of waste management is necessary and makes sense purely from an economic perspective - he hesitates to say that legislation should enforce regionalisation.
- * Recycling and source management for resource recovery:
 - amount of material which can be recovered depends upon economics;
 - at present most waste is recycled at source by factories;
 - does not think that there is great potential for resource recovery to reduce the amount of waste to be disposed of due to contamination of the remaining material.
- * Believes in free exchange of knowledge and therefore does not support legislation for the protection of trade secrets which can be of benefit to the whole of South Africa.

MANAGER J

- * Believes that management of waste is a "gut-feeling" practice and not a "legislative" practice - the trigger mechanism for management would not be legislation *per se*, but rather the level of technology, the manager's "gut-feeling", his personal preferences and, as a secondary aspect, it would fit into the legislative framework.

- * The "missing link" in legislation is the prescriptive aspect.
 - * Sees water quality as the main factor to consider in respect of waste management, followed by atmospheric dust pollution and then health considerations.
 - * What should be done is :
 - cut down on legislation;
 - produce new legislation;
 - "hit hard targets";
- in the context of a new society of future South Africa.

MANAGER K

- * Most waste managers operate along the lines of what they think is best and therefore do not have much reference to "wider" legislation beyond own by-laws.
- * Adjacent areas have different standards and expertise.
- * It is important that legislation keeps up with current technology and encourages the use of better systems.
- * No need for further control of trade secrets.

MANAGER L

- * Agrees with source separation :
 - a large volume of material can be recovered and re-used;
 - reduces volume of waste stream;
 - prolongs the life of a landfill site and equipment.

MANAGER M

- * Small local authorities do not all have qualified people in charge of waste management.
- * Supports proposed landfill regulations but feels that they will have to be selectively applied.
- * Legislation must benefit the whole community and should not be counter-productive.
- * Believes that education is better than enforcement - market forces should be allowed to function.
- * If benefits could be put back into the community waste managers would have more support.

MANAGER N

- * There are greatly varied socio-economic groups in the Black communities and therefore varied types of waste.
- * Despite the needs of the lower groups for fuel, there is still a lot of paper in the streets.

MANAGER O

- * Has never been in a position to obtain guidance from the authorities as far as technical matters are concerned. Believes it not to be a lack of specific legislation but rather a reflection of the stage of development in South Africa.
- * Believes that South Africa must develop its own philosophy towards waste management.
- * Believes that waste management has two objectives:
 - environmental protection in the most cost-effective way;
 - source management.
- * Agrees that domestic refuse has a great amount of potential for the recycling of materials - but there are technical problems.
- * Not necessary to legislate for trade secrets - it is the generators' problem.

MANAGER P

- * Source separation : domestic waste is the main problem and costs are against separating it.
- * Controlling/co-ordinating body : not keen on more formalities than exist at present.

MANAGER Q

- * Did not find difficulty with prosecutors in having matters heard in the courts.
- * Materials recovery must be done at source.

MANAGER R

- * Believes that there should be far more separation of waste at source, but would not like to see a law for the separation of waste at household level. Believes that the

idea of people collecting cardboard and materials such as plastic, glass as well as metals and alloys should be encouraged. This should be allowed on industrial sites or sites where there is no health hazard. People should be encouraged to separate materials on a "free will" basis where economic forces take effect.

* Proposed set of landfill regulations was the single most important piece of legislation which made waste managers, country-wide, take note of what had to be done when it came to waste management.

* No difficulty experienced with courts as his city's own municipal courts, where littering and dumping offences are successfully prosecuted, are used.

* Has instituted community service as a sanction in conjunction with NICRO. Has had no difficulty in fitting them in the management structure for community service purposes.

- "Where you have people who earn R1000,00 per month as well as per annum, the only way to punish them equally is to punish them in time."

- "We have found that as soon as a man has done community service, he is a friend for life - he will understand why we have the problems and he will support anti-litter programmes."

* "You can do nothing without the right law."

* Has seen Environmental Protection Agency concept work in First World countries such as United States of America, Holland and Denmark. However, he believes that it can work in Third World countries and is especially applicable to them as their local government is not as strong as that of the First World.

* Would prefer to see application of a broader approach from the Environmental Protection Agency than the biased approach from, say, the Department of Water Affairs.

ANNEXURE L**RESPONSIBILITY FOR
ACTS OF PARLIAMENT
DEALING WITH URBAN SOLID WASTE****1. The State President**

- * Financial Relations Act 65 of 1976
- * Physical Planning Act 88 of 1967

(In terms of Section 13B of the Physical Planning Act:

"The State President may by proclamation in the Gazette assign the administration of any provision of this Act to any Minister or the Administrator of a province.")

2. Minister of Agriculture

- * Animal Slaughter, Meat and Animal Products Hygiene Act of 1967
- * Lake Areas Development Act 39 of 1975

3. Minister of Constitutional Development and Planning

- * Promotion of Local Government Affairs Act 91 of 1983
- * Regional Services Councils Act 109 of 1985

4. Minister of Economic Affairs and Technology

- * Mines and Works Act 27 of 1956
- * Precious Stones Act 73 of 1964

5. Minister of Environment Affairs and of Water Affairs

- * Rand Water Board Statutes (Private) Act 17 of 1950
- * Water Act 54 of 1956
- * Sea Fisheries Act 58 of 1973
- * Environment Conservation Act 100 of 1982
- * Forest Act 122 of 1984

6. **Minister of National Health and Population Development**
 - * Medicines and Related Substances Control Act 101 of 1965
 - * Foodstuffs, Cosmetics and Disinfectants Act 54 of 1972
 - * International Health Regulations Act 28 of 1974
 - * Health Act 63 of 1977

7. **Minister of Transport Affairs**
 - * Sea Shore Act 21 of 1935
 - * Advertising on Roads and Ribbon Development Act 21 of 1940
 - * National Roads Act 54 of 1971
 - * South African Transport Services Act 65 of 1981

8. **Commissioner for Inland Revenue**
 - * Income Tax Act 58 of 1962

ANNEXURE M

SUMMARY OF THE DETAILS OF PROPOSED SOLUTIONS BY THE WASTE MANAGERS

This Annexure contains a summary of the details of solutions proposed by the waste managers to problems experienced or foreseen by them with the relevant legislation. These details were obtained from the waste managers during the course of the personal interviews which were conducted with them. The details are reflected in the summary in Chapter 6 but are not set out in the guiding principles in Chapter 7.

The details have not been listed in order of significance. They have, however, been placed in groups under sub-sectional headings. Due to the overlapping nature of the details, the headings of the sub-sections should not be construed as definitive or prescriptive but merely as guides.

1. General aspects

1.1 Policy

* It should be made clear in the national policy on waste that, at the source level, the generator of waste is always responsible for dealing with his waste.

1.2 Production and administration

* In order to overcome the lack of a cyclical approach (involving people who work "at the coal face") in the review of proposed legislation, provision should be made for proposed legislation

be published for comments. These comments and the proposed legislation should then be referred to the national policy-making body for evaluation before the comments and/or legislation are accepted or rejected by the Legislature. Here the Institute of Waste Management should be consulted at an early stage, not *ex post facto*.

1.3 Lack of clarity

* The "model" set of regulations to be issued in terms of the proposed Waste Control Act should deal with, at least:

- recycling (For example, separation at source, by the generators, of waste - such as into putrescibles and non-putrescibles. Non-putrescibles can then be taken to transfer stations for further separation and use.);
- litter (especially the definition thereof for use on a national basis);
- domestic refuse (including specifications for waste disposal bags).

1.4 Flexibility

* In order to facilitate its application, the relevant legislation must accommodate the new type of South African urban society, with its range of characteristics, which is developing in Third World circumstances. Examples of aspects to be considered in this regard are:

Land-use legislation: This should be amended to provide for "interim" disposal sites or transfer stations where local entrepreneurs/contractors can off-load waste for the population to select what they require.

Garbage picking/scavenging: This should be allowed to occur under controlled conditions

on "interim" disposal sites, small and industrial landfill sites as well as at transfer stations for larger sites.

Health and air pollution measures: These should be revised and more leniently applied.

* There is a need for flexibility in the application of standards after a clear definition of the problem and based on a well-researched assessment of the situation .

2. Specific aspects

2.1 Qualifications and standards

* Before waste managers are allowed to function as such they should have the relevant training, qualifications, experience and equipment and must have developed the necessary expertise.

* Specific provision should be made for the waste management market to be opened to private operators.

2.2 Education

* In order to deal with the lack of awareness of the environmental issues generally by the public and by officials the following steps should be undertaken:

- provide for environmental education as part of the school curricula at all levels;
- introduce legislation compelling local authorities to spend money on educating their public and their officials in respect of environmental issues;
- ensure the training of justice officials in respect of the environment generally and waste in particular.

2.3 Generation of waste

* Legislation should deal with the preventative side of waste management very specifically: for example, legislate for the education of the public, attitude change and the scientific investigation of the impacts of different kinds of packaging.

* Provision should be made in legislation for subsidies in respect of actions which are designed to lessen the impact on the urban solid waste stream and thus assist the management of the waste stream. Such subsidies must not, however, contribute to an increase in economic inflation.

* Legislation should be introduced to prevent the use of materials which hinder efficient and environmentally sound waste management if alternate materials can be substituted; provided such substitution will assist in achieving the objectives of the national waste policy.

* Some body should be appointed to approve materials for use in the manufacturing processes - but consideration should be given to economics in such decision-making.

* Incentives to reduce the number of packages/bulky packaging should be introduced.

2.4 Separation of waste

* Have the public separate materials with delivery of the separate materials to be by the public to material recycling centres for some economic benefit to those who deliver such materials.

* Central Government should introduce a financial incentive to separate and recycle (especially in the rural areas) by lowering transportation costs.

2.5 Re-use and recycling

* Metals used in beverage containers should be standardised.

* Establish and guarantee the stability of the markets for recyclable materials in some form (for example, guaranteed prices) before introducing legislation for source separation.

* Impose a tax on all containers used by the public to encourage return of the items for the recycling thereof. The tax should be used to fund research into the recycling of non-biodegradable materials.

* Legislation should be introduced to guarantee floor prices in the market for recyclable materials.

2.6 Disposal

* When every product (durable or non-durable) is produced a tax covering the cost of its disposal should be imposed at the production end of that product's life-cycle.

* Legislation should provide for the compulsory printing of a message/instruction on every container as to how that container should be disposed of.

* Legislation to encourage or compel regionalisation and thus higher standards in terms of which legislation:

- local authorities will be responsible for the collection of waste;
- regional authorities will be responsible for the disposal of waste;

which will result in the proper utilisation of expertise in the field of disposal. However, regionalisation should not necessarily be along the political base of the Regional Services Councils.

* Legislation should prohibit the "filling in" of open land areas without permission from the relevant authority.

* Legislation dealing with landfill sites should provide for the conditional licenced establishment, operation and closure of the sites.

2.7 Judicial provisions, including penalties

* Municipal Courts, staffed by persons trained to deal with environmental issues, should be established. These Courts could precede the establishment of the proposed Environmental Courts.

* The legislation should incorporate "positive" (for example, community service) and uniform sanctions and should ensure some form of publicity (including possibly the publication of an apology in a newspaper) in respect of offenders.

Punishment should be something that will benefit the environment and be of educational value. Community service should emphasize showing people what they have done to offend the environment so as to improve their understanding of the problems experienced by waste managers.

* Certain sanctions should be amended to provide as follows:

- litterers (seen as "careless folk"): community service;
- dumpers (seen as "hard criminals"): heavy fines, gaol and confiscation.

2.8 Data in respect of waste

* In order to acquire data in respect of waste, legislation should be introduced requiring:

- larger local authorities to produce data in respect of waste on a more organised basis;
- all persons using and operating landfill sites to keep records.