

**AN INVESTIGATION INTO THE FACTORS
CONSTRAINING THE RESOLUTION OF
URBAN ENVIRONMENTAL PROBLEMS AT
LOCAL AUTHORITY LEVEL IN SOUTH AFRICA**

by

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Men and their works have been a disease on the surface of their planets before now. Nature tends to compensate for diseases, to remove or encapsulate them, to incorporate them into the system in her own way The historical system of mutual pillage and extortion stops here on Arrakis. You cannot go on forever stealing what you need without regard to those who come after. The physical qualities of a planet are written into its economic and political record. We have the record in front of us and our course is obvious.

Pardot Kynes - 1st Ecologist of desert Planet Arrakis,
DUNE by Frank Herbert (1965)

ABSTRACT

The imminent promulgation of the Environment Conservation Act, No. 73 of 1989, which made provision for the devolution of responsibility for environmental matters to the third tier of government authority, was the primary motivation for this research, conducted throughout South Africa between 1988 and 1990. Local authority officials were concerned that they did not have the knowledge, manpower and infrastructural resources to accept this responsibility. This concern was reinforced by the rapid urbanization of predominantly disadvantaged communities for whom little provision had been made.

A stratified selection for study purposes of urban areas from the whole of South Africa and all its population groups ensured a reasonable sample of metropolitan regions, regional centres, principle towns and smaller outlying urban areas.

Semi-structured interviews were conducted with representatives of government authorities, Non-Government and Community Organizations and practitioners, either implementing or interacting with environmentally related legislation at the local level.

With the permission of all participants, the interviews were recorded on audio-cassettes and later transcribed by the interviewers using a word processing programme. Out of these transcriptions, approximately 1000 problem-and-solution groupings were identified and classified. The most widely held perceptions of factors constraining the resolution of urban environmental problems at local authority level were subsequently compared to the provisions of the Environment Conservation Act.

It was found that these perceptions of factors requiring attention for the resolution of urban environmental problems are strongly linked to the establishment, maintenance and improvement of environments which contribute to a generally acceptable quality of life. This accords with only one of the four explicit provisions of the Environment Conservation Act.

There is a widespread perception that until human needs (Maslow, 1968) are either satisfied or at least addressed, and the whole population incorporated into a more equitable legal framework, the successful implementation of environmental conservation in South Africa will be severely impaired. Furthermore, that the South African Government's adherence to the political ideology of separate development constitutes an abuse and exploitation of scarce resources.

Recommendations are that the human needs of the whole population of South Africa must be addressed and environmentally destructive legislation repealed in order to truly resolve urban environmental problems, that the participation of the public in matters relating to the effective protection and controlled utilization of the environment be required, that administrative, natural and functional boundaries need to be aligned, and that the structure and responsibilities of bureaucratic hierarchies responsible for environmental management in urban areas need to be set out clearly.

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LE'HAIM!

TO LIFE!

PREFACE

This research report is based on a study conducted by Llewellyn Botha and Eileen Weinronk between February 1988 and June 1990. The study was funded by the Human Needs Resources and Environment (HNRE) programme of the Human Sciences Research Council (HSRC) and is presented in five documents titled "Practical Implementation of Balanced and Legally Appropriate Environmental Policies by Local Authorities".

Under the direction of Professor RF Fuggle of the Environmental and Geographical Sciences Department of the University of Cape Town, Botha and Weinronk were employed to investigate the nature and cause of urban environmental problems associated with the anticipated devolution of authority to the third tier of government as proposed in the Environment Conservation Bill published for comment in October, 1987.

Research activities were shared between the two researchers to make best use of the expertise and professional training of the individuals. Botha, a qualified attorney and environmental scientist, interviewed participants on matters relating to the physical and natural environments. Weinronk, a qualified architect and registered Master's student in the Environmental and Geographical Science Department, interviewed participants involved with the built and social environments. Certain interviews were conducted jointly.

Together the researchers identified approximately 1000 problem-and-solution groupings from the transcriptions of these interviews. These problem-and-solution groupings form the basis of the findings of the above-mentioned documents and also provide the primary data for this research report.

The confidentiality of the interviews was assured for all participants. Section 1 of Botha and Weinronk, being the transcriptions of these interviews, is therefore confidential. The remaining Sections, being Sections 2 to 5 inclusive, are however available at the

Environmental Evaluation Unit at the University of Cape Town should the reader wish to verify the contents of Chapter 5 herein, or consult these documents for any other reasons.

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

The Environment Conservation Bill, published for public scrutiny and comment in 1987, demonstrated the South African Government's intention to devolve responsibility for environmental conservation to all levels of government, including the local level. Part 1 Section 3 of the Environment Conservation Act No.73 of 1989, entitled "To provide for the effective protection and controlled use of the environment and for matters incidental thereto", states that:

Each Minister, Administrator, local authority and government institution upon which any power has been conferred or to which any duty has been assigned in connection with the environment by or under any law, shall exercise such power and perform such duty in accordance with the policy referred to in Section 2.

South Africa, like most developing countries in the world, continues to experience the rapid urbanization of its predominantly disadvantaged communities, with an associated depopulation and retrogression of rural areas and smaller outlying urban areas (Appleton, 1988: p38; Craven 1990: p5; Oppenheimer, 1990: p12). This situation has, and continues to place, increasing demands on urban infrastructure, resources and the ability of the administrative structures to provide for the basic needs of these urbanizing communities and existing urban communities (Bunyard and Morgan-Grenville, 1987: p224; Huntley, Siegfried and Sunter, 1989: p 51; Watson, 1990: p17).

Local authority officials in metropolitan regions were thus concerned about their own abilities, and especially about those of outlying local authorities, to accept this responsibility. It was their assumption that a national set of balanced and legally appropriate environmental by-laws would be essential to the successful implementation of this legislation (Pers Comm: PJS Briggs, Municipality of Westville; A Horgevoorst, Cape Town City Council; C. James, Johannesburg City Council).

A research project aimed at the development of environmental policies which would assist local authorities in their attempts to grapple with the implementation of the responsibility invested in them by the then proposed legislation, was funded by the HNRE (Human Needs Resources and Environment) programme, of the HSRC (Human Sciences Research Council). The research was undertaken between February 1988 and May 1990.

1.2 APPROACH

1.2.1 HOLISM AS AN UNDERPINNING PHILOSOPHY

The philosophy of holism (Smuts, 1987), a widely accepted environmental principle, is regarded as being essential to the successful implementation of the Environment Conservation Act, 1989. This philosophy, which stresses the inter-relatedness of things, is in conflict with the specialized nature of South African Government departments and with the nature of professional performance.

As specialists we are often ignorant of, or insensitive to, elements of the total problem outside our sphere of expertise. We are actually trained to have a biased view of real-world problems. But, man-land relationships require a holistic perspective, an ability to appreciate the many aspects that make up the real problem - economic, technical, biological, social, legal, and moral. An ability to understand relationships between the specific elements is central to dealing with man-environment problems. (Fuggle and Rabie, 1983: p5)

1.2.2 SCOPE OF THE PROJECT

Similarly, environmental problems are characterized by an almost intangibly large range of diverse and seemingly unrelated issues. Issues dealing with the physical, natural, built and social fabric of our lives are embodied in the term "Environment". No aspect can be ignored. In order to allow the manageable resolution of the potentially immense scope of this project certain restrictions had to be placed on the extent of the work. However, the foundations for the determination of an environmental policy in South Africa as contained in the Environment Conservation Act, mentioned above, are accepted as the

premises upon which the development of the project is based and against which the findings are evaluated. These foundations are:

- (a) The protection of ecological processes, natural systems and the natural beauty as well as the preservation of biotic diversity in the natural environment;
- (b) the promotion of sustained utilization of species and ecosystems and the effective application and re-use of natural resources;
- (c) the protection of the environment against disturbance, deterioration, defacement, poisoning or destruction as a result of man-made structures, installations, processes or products or human activities; and
- (d) the establishment, maintenance and improvement of environments which contribute to a generally acceptable quality of life for the inhabitants of the Republic of South Africa. (Part 1 Section 2.(1) p4)¹

Due to the rapid urbanization being experienced in South Africa (Watson, 1991: p16) the scope of the project, whose methodology and findings form the basis of this report, was limited to environmental problems in selected urban areas. It should nevertheless be recognized, that rural development is also a dimension of urban environmental conservation and urbanization policies (Wilson and Ramphela, 1989: p25).

Rural and urban development are interdependent and complementary activities. The welfare of rural and urban people is inextricably linked through the process of rural-urban migration and the role of the urban-rural income gap in inducing this migration. Balanced attention to both sectors will raise overall levels of living more quickly than development strategies biased in favour of urban or rural development alone (Bernstein, 1987: p34).

1.2.3 THEORETICAL FRAMEWORK

1.2.3.1 Legislation

Legislation responsible for the regulation of urban environmental problems is contained in many separate pieces of national legislation, provincial ordinances and local by-laws and is implemented by many different authorities. Desk-top identification of the full range of legislation (national, provincial and local) and of government officials responsible for the urban environment, was not perceived to be the most appropriate utilization of

¹ The statements contained in Part 1 A 2.(1) from the Draft Bill published in October 1987, and sent to all participants, and contained herein as Annexure B, does differ slightly. However, it was decided that the basic tenets and principles coincide sufficiently so as to justify the inclusion of the words of the promulgated Act in this report.

resources available for this project, nor the most appropriate approach or format for this research.

1.2.3.2 Literature Review

Literature reviews did not reveal any relevant theoretical framework that could be adopted. Most published research material concentrates on singular aspects of the urban environment.

Nevertheless such literature as concentrated on the environmental impacts of urban activities seemed to suggest that a broader range of constraints inhibit the resolution of urban environmental problems.

1.2.3.3 Preliminary Discussions with Primary Motivators

Initial discussions were held with local authority officials in the Cape Town region. These officials anticipated that participants in this project would respond to a mailed questionnaire by identifying specific legislation linked to easily quantifiable problems.

Responses of this nature would provide a scientific and reductionist framework of analysis rather than the holistic understanding being sought.

Consequently unstructured interviews (Dixon and Leach, 1977: p4) were undertaken with practitioners and researchers in the environmental field in order to assess the views of affected parties on an appropriate format for this research. Two approaches were favoured. These were for this research to either adopt a case study approach, or to identify a limited range of urban environmental impacts and to investigate these throughout the country.

Both approaches contained the inherent danger that they would limit the possible range of issues that needed to be recognized by either those experienced in the urban area chosen for the case study, or to those identified because of a preconceived notion of what the problems would be. (Dixon and Leach, 1984: p14)

1.2.4 NATIONAL APPROACH

It was consequently decided to conduct the research amongst a selected cross-section of local authorities throughout the country. Within each selected urban area, local authorities, practitioners, as well as Non-Government and Community Organizations interacting with them, were interviewed in order to bring to light the full spectrum of urban environmental management problems experienced by people at the local level. This aspect is further dealt with in Chapter 2 Section 2.3 and Chapter 3 Section 3.5.

By adopting a national perspective, it was anticipated that it would be possible to establish whether commonalities exist on a national scale, the nature of these commonalities and whether the issues raised would best be dealt with by national legislation or by some other mechanism.

1.2.5 FLEXIBILITY

A basic premise adopted in this study was the need for the format of research to remain flexible to the nature of the study. No preconceived notion about the range of problems nor the weighting of impacts would be possible. Details of how this was done and why certain decisions were taken are discussed in Chapter 2 "Development of a Model". This chapter deals with the development of the conceptual model, the study area, target groups, process of evaluation and classification of the findings.

1.3 OBJECTIVE

The objective of this research was to provide a base document to guide local authorities toward appropriate and practical resolution of urban environmental problems held to be important by those actually involved in local authority affairs in South Africa. Consequently, the findings and guidelines should be in a format helpful to local authorities and to Non-Government and Community Organizations dealing with urban environmental issues.

1.4 DEFINITION OF TERMS

These definitions are provided to place the study in context and to facilitate the readers' comprehension of the research.

APARTHEID LEGISLATION

The Group Areas Act, the various Land Acts, Population Registration Act and Separate Amenities Act are generally taken to be the cornerstone legislation enforced by the South African Nationalist Party Government during the Era of Apartheid (Smith D, 1982: p10).

CONSTITUENT COMMUNITIES

When this term is used in the text, it should be read as referring to those who physically constitute a community, and in no way implies or refers to their being enfranchised or otherwise.

DEVELOPMENT

Genuine development work is that which empowers people; which enables them to build organizations that, like a hydro-electric dam, pool their resources and generate power where previously there was none. Such organizations are valuable not only for what they can achieve but also as an inspiration to others. (Wilson and Ramphele, 1989: p262)

Turning the despair and pessimism, which presently affect wide circles of people inside and outside Africa, into hope and optimism for the future will only be possible if all actors involved one way or the other in African development are ready to question the premises on which they have based their outlook, strategies or action to date. Nobody escapes this challenge There are no shortcuts (Hyden, 1983: xiv).

ENVIRONMENT

Used to indicate the physical, social, natural and built environments.

GOVERNMENT

The word "government" has been written in lower case because a country can have many governments in the course of its history. A State is capitalized because this term refers to an "over-arching" arching concept, eg. a government is in control of the State, or can determine State policy but never becomes the State. For clarity, a State usually outlives a government, eg. United Kingdom. In a classic fascist State, eg. Mussolini's Italy or Hitler's Germany, the government was almost synonymous with the State. In South Africa, for 40 years the same appeared to be true, and was experienced by many

as being one and the same thing. However, to denote the transitory nature of government it has been decided not to capitalize "government". The State on the other hand has been capitalized to denote the idea that the State hopefully outlives the government that happens to be in control of it at any one time. Where government has been capitalized, it is done with intent.

MASLOW'S HIERARCHY OF NEEDS

The author has difficulties with Maslow's particular use of the word "satisfaction" in that it would seem to imply that the needs listed by Maslow are in fact able to be satisfied in their entirety. The noun "satisfaction" seems to have a static connotation which does not reflect the dynamic nature of environmental issues and the human condition. It is therefore felt that the use of the term "accommodate" is more appropriate because it denotes the willingness to meet needs, rather than implying that needs can ever be entirely fulfilled. By definition, "human needs" as a general term is by its very nature an open-ended concept which is infinite in its application and range of meaning. Hence the preference for the term "accommodation" (of human needs) in place of "satisfaction" (of human needs). However, where the noun "satisfaction" is used, it is used with intent and modified in terms of this definition.

PERFORMANCE CRITERIA

Performance criteria for the purposes of this study are taken to mean the flexible application of environmentally sustainable standards which takes cognizance of the diversity of needs, constraints and opportunities as they arise in given situations.

SOUTH AFRICA

For the purposes of this study, South Africa refers to the section of land which constituted the Republic of South Africa on the 31st May, 1961. The TBVC States and self-governing territories are therefore included. The TBVC States refer to Transkei, Bophuthatswana, Venda and Ciskei. The self-governing territories are also often referred to as Homelands.

SUSTAINABLE DEVELOPMENT

Sustainable development is development which meets the needs of the present, without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:

- The concept of "needs", in particular the essential needs of the world's poor, to which overriding priority should be given; and
- the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs (World Commission on Environment and Development, 1987: p43).

CHAPTER 2

DEVELOPING A MODEL

2.1 INTRODUCTION

The anticipated devolution of responsibility to local authority level and possible implications of current as well as anticipated urbanization trends were highlighted in the background to this report. (Section 1.1) The extent and nature of existing and anticipated environmentally related problems in South Africa, as well as the resources available for the project, made it necessary to limit the physical context and study area within a justifiable theoretical or practical framework. In the absence of any useful published research material or existing acceptable mechanisms, such as legislation, the following discussion traces the development of a conceptual framework that was used to define the limits of the physical context and study area.

2.2 ESTABLISHING THE PHYSICAL CONTEXT AND STUDY AREA

2.2.1. ENVIRONMENTAL SYSTEMS AS A THEORETICAL FRAMEWORK

An ideal theoretical framework for determining the study area for this research would have been a framework that is derived from the physical, social, natural and built environmental systems operating in and around areas of urban settlement. Unfortunately, in South Africa existing politically imposed management boundaries take no cognizance of environmental systems operating in and around these urban areas. Furthermore, the literature reviews undertaken did not reveal that any such framework had been used to define management boundaries in any developed or developing countries.

Therefore, in the absence of any local or international precedents it was necessary to accept existing local authority boundaries as a starting point for determining the study area. However, this decision was made with due regard to Dixon and Leach's

recommendations in Section III (ii) of "Survey Design in Underdeveloped Countries".

Namely that:

Administrative units may not make the most suitable boundaries for populations studied, as they may bear little relation to the pattern of settlement, or economic, cultural or linguistic groupings (Dixon and Leach, 1984: p14).

2.2.2 POLITICAL AND PHYSICAL CONTEXT: INHERITED AND EXISTING PARAMETERS

The definition and identification of both the geographical limits of South African urban environments and the government authorities responsible for the maintenance and control of these environments, posed certain problems. The following discussion, which deals with the direction of growth and development of South African cities, gives the reader some appreciation of the complexity of these issues and the difficulties encountered in determining the study area as well as the target group selected for this research.

The Stallard Commission of 1922 (Transvaal. Local Government Commission [1921],1922), suggested that:

Natives - men, women and children - should only be permitted within municipal areas in so far and for so long as their presence is demanded by the wants of the White population (Smith, 1982: p19).

The Urban Areas Act of 1923 promulgated that:

Urban areas were a "European" preserve and that Africans were temporary sojourners, there to serve the economy as long as they were needed, but no longer (Grest, 1988: p90).

Thus, blacks could no longer own land in white urban areas and were allowed permanent occupation in municipally supervised locations only while they were "usefully" employed.

This legislation laid the foundations for the apartheid state built in the 1950s, and established the existing patterns of settlement, growth and management of South African towns within the framework of separate development.

In the comprehensive design of Apartheid Society, the location of land directly used for production has generally followed conventional economic principles. Residentially, however, the city has been strictly compartmentalized into segregated, racial Group Areas. Furthermore and through control over land ownership and a closely related public housing process, population removals and resettlement, large components of the urban built

environment have been generated through State action and have been controlled by it. Strong social/ethnic, socio-economic and political asymmetries between groups in S. African Society have thus been structured into strong spatial variations in the availability of land, in land use inputs and qualities and in levels of public control. The spatial form adopted for these structured variations, which places the poor on the distant periphery, frequently at great distances from work places, has, in addition effectively inverted the conventional space relationships found in the capitalist city. The result has been to greatly exacerbate the inequalities and locational disadvantages experienced by the poor who in S. Africa will be mostly non-white and black in particular (Davies, 1989: p3).

Two aspects of direct consequence to defining the physical context and study area of this research were that firstly, racially segregated municipal authorities were established at the local level to deal with the needs of white urban areas and adjacent "native locations", and secondly, Native Reserves, now known as the TBVC States and self-governing territories such as Gazankulu, Lebowa, Qwa Qwa, Kwa Zulu, Ka Ngwane etc, were established, and are in close proximity to metropolitan areas and regional centres.

In the first aspect, black urban areas were managed by State appointed municipal authorities who were:

... delegated the power to build and administer "native locations" and to control African housing. (Grest, 1988: p90)

This separation of white urban areas and "native locations" was further entrenched by the implementation of the Group Areas Act which

although (the Act) did not specify plans for particular cities, it required complete separation of the races and it contained a planning philosophy to which individual municipalities were required to conform (McCarthy, 1984: p57).

Furthermore, Advisory Boards, latter called Urban Black Councils, were set up to represent black interests, but remained essentially powerless bodies with little credibility in the communities they were supposed to represent and whose existence did little to enhance credibility of the municipal authorities (Grest, 1988: pp88,90). The following quotations from Knill's paper on "South Africa's Municipal Elections" summarizes the complex nature of local authority structures, their credibility and accountability.

Despite ostensibly being equivalent bodies, the Primary Local Authorities of each race group have different powers, and are funded in different ways. Whites voted for councillors on municipalities, coloured and (I)ndians for committee members on management committees, and blacks for 'members of a local authority' on a city council, town council, town committee or local authority committee (Knill 1990: p74).

and further:

The October elections were for third tier structures, the decisions of which can be overturned at second or first tier levels. The structure of the system facilitates the movement of commands down the hierarchy, and minimizes public accountability by the government appointment of, rather than democratic election of, second and first tier officials (Knill, 1990: p77).

The second aspect,

create(d) metropolitan regions in parts of the country that combine a "homeland" settlement and a "white" urban area (Bernstein, 1985: p 93),

gave rise to a situation where those who work in white South Africa yet live in these "homeland" settlements are neither accountable to, nor represented by, South African authorities, whether local or national. The Environment Conservation Act whose directives form the basis of this research, invests local authority structures with the responsibility for the management and control of the urban environment. However, these "homeland" dwellers, although residing "outside" of the Republic of South Africa, remain a constituent part of the urban economy and environment and their inclusion in this research was therefore essential. This decision is supported by Perlman's work on the *favellas* of Brazil (Bernstein, 1985: p88). In the South African context Bernstein lists the most important of these regions as being Pretoria/Winterveld (Bophuthatswana), East London/Mdantsane (Ciskei) and Durban/Kwa Zulu and identifies these regions as "commuter frontiers".

Although local authorities structures are invested with the responsibility to manage and control the urban environment they remain essentially racially segregated and are therefore fragmented (Wilson and Ramphela, 1989: p165). An investigation into the factors constraining the resolution of urban environmental problems at local authority level in South Africa must recognize the practical as well as psychological implications of the preceding discussion as they clearly affect the definition of the study area and the selection of urban environments for inclusion in this research (Watson, 1990: p18).

In conclusion, it would not be appropriate to adopt these structures and management divisions, which have been established in accordance with a political ideology that can clearly hinder the regulation and resolution of urban environmental problems.

2.2.3 TOWARDS AN ALTERNATIVE FRAMEWORK FOR ESTABLISHING THE STUDY AREA

In attempting to deal with the diverse implications of separate development on sound urban planning principles in the Durban metropolitan region, the Planning Forum (convened by Tongaat-Hulett Properties) developed the concept of the "Durban Functional Region." This framework cuts across existing politically imposed boundaries and instead includes all population groups reliant on the economy and environments of the Durban metropolitan region.

(T)he Durban Functional Region (DFR), comprising the metropolitan area as well as those areas and people that are and will be functionally linked to Durban on a daily basis (Tongaat Hulett, 1989: p3).

This framework does not, however, ensure that the boundaries of physical and natural environmental systems will be included and therefore falls short of an holistic approach to the resolution of urban environmental problems. For the purposes of this research, in cases where physical and natural systems might be divided or excluded by a rigid adoption of this approach, the government agencies dealing with these systems were also included.

2.2.4 CONCLUSION

The study areas thus defined for this research and mentioned in Chapter 1, is limited to a range of urban environments within South Africa and including the TBVC States and self-governing territories, defined by their functional boundaries and physical and natural systems.

The final choice of specific urban areas selected as the study areas is discussed in Chapter 3 Section 3.4.

2.3 ESTABLISHING THE TARGET GROUP

2.3.1 URBAN ACTIVITIES AS A MEANS TO DEFINING THE TARGET GROUP

Within the parameters of the study area discussed above, a broad understanding of general urban activities and resources was necessary. Appleton's paper on the "Primary Obstacles to Improving the Quality of Life of the Newly Urbanized", which cites Brand's "physical considerations of urbanization" (Appleton, 1988: p38) formed the basis of the Orientation Document (Annexure C) which was sent to all participants. The fundamental urban activities specified in the Orientation Document are: Working; recreation; transportation and services (infrastructure) and lastly; social services, formed the basis from which management structures and urban consumers were identified. The following groups signify those implementing or interacting with existing environmentally related legislation.

2.3.1.1 Urban Management and Control

This group comprised government authorities, including all levels (national, provincial and local) interacting with local authorities in a diverse range of aspects.

2.3.1.2 Direction

Professional bodies are significant to this study as market trends play a large part in directing the nature of urban growth. These were the Engineering Institute, the Institute of Public Administration, the Institute of South African Architects and the CBD Associations (Central Business Districts).

2.3.1.3 Urban Consumers

These are Non-government and Community Organizations and acknowledged experts dealing with pollution, conservation of natural and historical resources, promotion of individual and community empowerment, housing and community health organizations, religious leaders.

2.3.2 TARGET GROUP

The target group would therefore include: National, provincial and local authority officials dealing with urban management and control as well as forward planning scenarios; representatives of Non-Government and Community Organizations interacting with government structures in their attempts to mitigate urban environmental deterioration; and individuals recognized as having extensive experience in dealing with urban environmental issues. Their fields of intervention would include all matters arising from the management, development and forward planning of urban environments.

Participants were requested to contribute to this research in their personal capacity and not purely as representatives of their organizations or government authority. (Annexure A)

The logistics of access, funding, timing and events in the broader spectrum of South Africa at that time affected all three groups and are discussed in Chapter 3, Sections 3.4 and 3.5.2.

2.4 SURVEY DESIGN

2.4.1 INTRODUCTION

It should be appreciated from the preceding discussions that the range of expertise, level of authority and empowerment as well as levels of formal education in the target group vary considerably. These variations cut across the broad groupings discussed above.

2.4.2 SEMI-STRUCTURED INTERVIEWS

Based on the intention that the responses inform the classification of the findings, discussed hereafter, it was necessary for all participants to be asked identical questions. An open-ended questionnaire (Annexure D) was developed as a basic format for semi-

structured interviews (Dixon and Leach, 19???: p4). Although participants would be encouraged to expand on these questions from their particular professional backgrounds and expertise, this basic format would ensure comparable responses from the broad range of participants. Together with pertinent extracts from the Bill (Annexure B), the Orientation Document (Annexure C) and a covering letter (Annexure A), this questionnaire was sent to all participants prior to the interviews. This documentation was intended to assist participants in their preparations for the interview and thereby maximize their contributions to this study.

It would therefore be incumbent upon the classification of the findings and the process of evaluation to correlate the similarities between the attitudes of different disciplines and to discover the issues that are particular to each discipline.

2.5 CLASSIFICATION OF RESPONSES

2.5.1 FLEXIBILITY

Supported by the contradiction between the perceptions of local experts and the understanding gained from literature reviews, discussed in Chapter 1, it was essential that the approach to the study and the development of a model remain flexible to the process of the research and to the nature of responses by participants.

2.5.3 CLASSIFICATION SYSTEM

It was deemed imprudent to impose any hierarchy of needs or premature classification system on the responses of the target group prior to the interviews taking place. By adopting a "bottom-up" approach to the evaluation, i.e. allowing responses from the target group to determine the classification system, further facilitated the identification of commonalities between seemingly different situations. Should relevant national commonalities not exist, the process of the research would provide sufficient justification for the development of solutions to urban environmental problems at the "coal face of

their occurrence", and obviate the need for a centrally devised plan being imposed on local authorities. The classification system and the evaluation of the findings are therefore discussed in Chapters 4 and 6 respectively. The findings are presented in Chapter 5.

CHAPTER 3

METHODOLOGY

3.1 INTRODUCTION

This chapter deals primarily with the practical considerations and methods employed to gather and process the data upon which this research is based. Academic justification for various items in this chapter are discussed in greater detail in Chapters 2 and 4. Where applicable, these references are signposted in the text.

Topics covered in this chapter are:

- 3.2 Initial Discussions
- 3.3 Literature Review
- 3.4 Study Areas
- 3.5 Target Group
- 3.6 Survey Design
- 3.7 Setting up Interview Schedules
- 3.8 Conducting and Transcribing the Interviews
- 3.9 Presentation of the Findings
- 3.10 Analysis and Evaluation of the Findings

3.2 INITIAL DISCUSSIONS

Initial discussions were conducted with local practitioners, acknowledged experts and other researchers in the environmental and planning fields. These unstructured interviews were conducted to augment the researchers' understanding of the range of issues then current in the urban environmental field. Furthermore, it was hoped that the insights gained from these individuals would define more clearly acceptable limits to the study

area as well as identify an acceptable approach to the study. (See Chapter 2 Items 2.2 and 2.3, being "Physical context and Study Area" and "Establishing the target group", respectively.)

3.3 LITERATURE REVIEW

Literature review was conducted in order to establish the range of issues then current in the urban environmental debate as well as the range of government authorities then responsible for the urban environment and associated activities. Moreover, evaluation criteria were sought as well as a framework for the classification of the findings.

National and local newspapers, newsletters of Non-Government and Community Organizations, as well as national and international papers from conferences on a range of urban environmental problems were consulted. This included broader ranging environmental literature, wherein attitudes, values and the development of models and processes were discussed.

The findings of this review are not reflected as an isolated aspect of this report, but underpin the understandings and justification for certain decisions. These are referenced in the text where pertinent.

3.4 STUDY AREAS

As previously stated this research was motivated by the imminent promulgation of the Environment Conservation Act (Section 1.1). Chapters 1 and 2, Items 1.2 and 2.2 respectively discuss the political context and subsequent limitations within which management boundaries or administrative units were established.

After due consideration of all the factors indicated in the foregoing paragraphs the following types of urban areas were chosen:

At least two major metropolitan regions undergoing rapid urbanization on their peripheries and experiencing increasing densities of inner city areas; a number of regional centres and outlying local authorities identified by the initial investigations as either experiencing economic growth or depression and related depopulation, and manifesting environmental deterioration. This whole was overlaid on a map of South Africa to ensure that most areas of the country would be represented in the research. The principles underpinning these decisions are supported by Wilson and Ramphele.

South Africa, like Gaul, can be divided broadly into three parts: the metropolitan areas of the major cities; the platteland comprising the towns and the white-owned commercial farms together with the smaller dorps or villages of the country; and the reserves (sometimes called homelands, or Bantustans, or even Black National States) originally set aside in terms of the 1913 Natives Land Act for occupation by Africans (Wilson and Ramphele, 1989: p23).

The urban areas from which representatives were chosen were grouped as shown.

METROPOLITAN REGIONS:

Durban Functional Region	(NTL)
Pretoria/Witwatersrand/Vereeniging Complex	(TVL)
Western Cape	(CAPE)

REGIONAL CENTRES AND OUTLYING LOCAL AUTHORITIES:

Bethlehem	(OFS)
Bloemfontein/Botshabelo/Heiderdal/Manguang	(OFS)
East London/Mdantsane/Gompo	(BORDER)
Empangeni	(NTL)
George	(SOUTH CAPE)
Knysna	(SOUTH CAPE)
Kroonstad	(OFS)
Ladysmith	(NTL)
Port Elizabeth/Uitenhage	(E.CAPE)
Pietersburg	(N.TVL)
Queenstown	(E.CAPE)
Rustenburg	(W.TVL)
Steytlerville	(E.CAPE)
Verulam	(NTL)

These areas are highlighted on the accompanying map (Fig 3.1), and a brief justification for each choice follows.

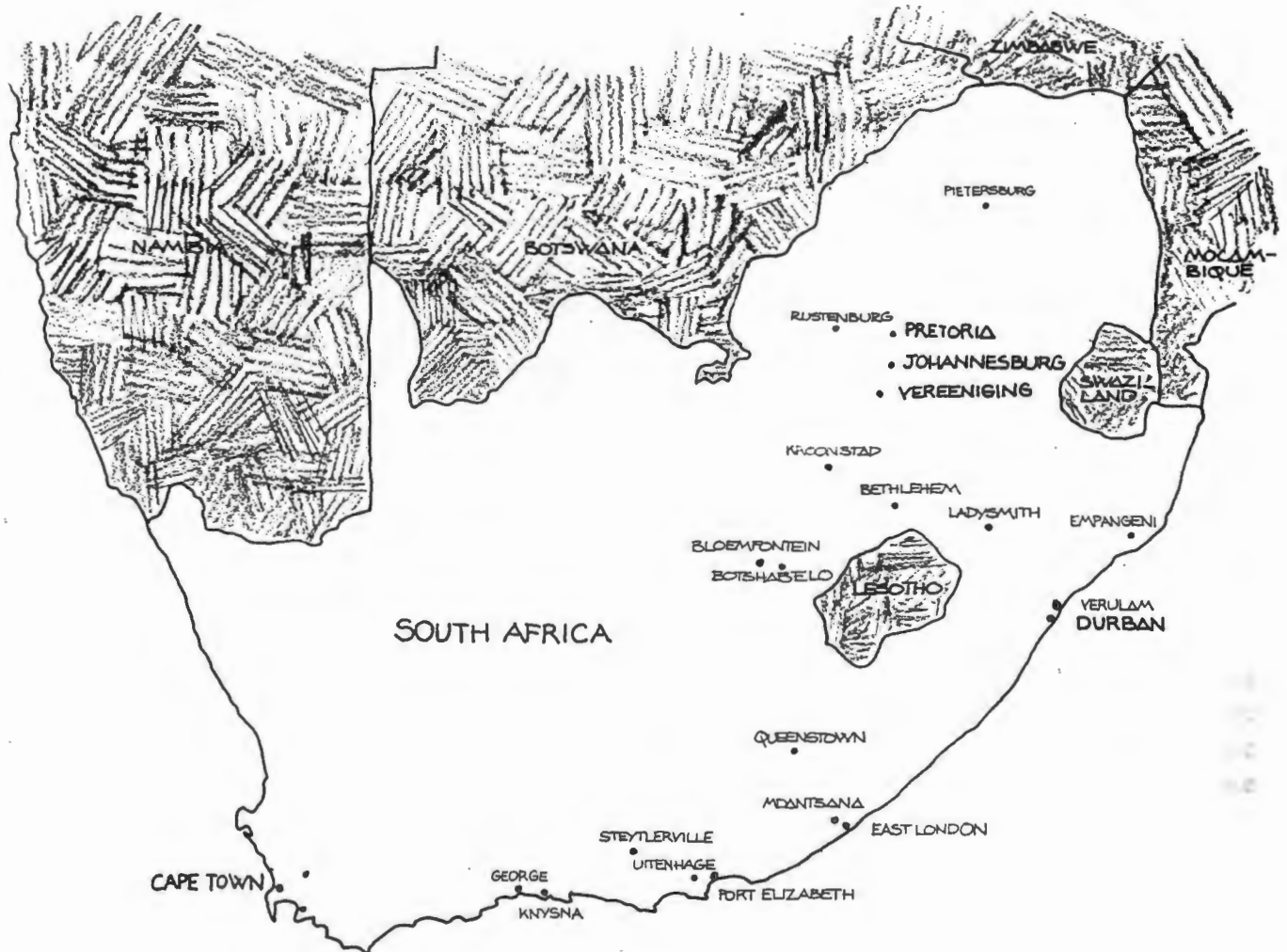


Figure 3.1 (Not to scale)

Durban Metropolitan Region:

This region is currently experiencing unprecedented urbanization resulting in major urban sprawl into sensitive natural environments on steep and unstable slopes. The then recently formed Metropolitan Open Space System (MOSS) as well as the structure and conceptual approach adopted by the Natal Town and Regional Planning Commission (NT&RPC) indicated to the researchers that holistic attempts were being made in this region to address their urban environmental problems.

Pretoria/Witwatersrand/Vereeniging Complex:

The established economic and industrial centre of the country, this complex is the base of many national institutions and professional bodies. Numerous newspaper articles, business journals and national bulletins suggest that this region is experiencing enormous problems with air pollution, transportation networks, service supply and housing shortages.

Western Cape:

In this region informal settlements in suburban, peri-urban and natural areas have received much media coverage and attention for many years. Furthermore, there has been a considerable increase in re-zoning applications of urban agricultural land for industrial as well as middle-to-high income residential development in this region. Traditionally the Mother City of the country, of great attraction to tourists for its natural beauty and resources, as well as being the home base for the researchers, this region could not responsibly have been left out of the selection.

REGIONAL CENTRES AND OUTLYING LOCAL AUTHORITIES

Bethlehem:

This principal town in the heart of the Orange Free State is an example of an outlying urban area in the hinterland of South Africa. Furthermore, the accomplishments of the nonracial community based organization called the Bethlehem Alliance Action Committee (BAAC) provided an example of a grassroots approach to the resolution of urban environmental problems in a traditionally politically conservative area.

Bloemfontein/Botshabelo/Heiderdal/Manguang:

This large urban area in the centre of the country includes a small portion of Bophuthatswana (TBVC State) and is adjacent to the Kingdom of Lesotho. Tax and other financial incentives, legislated to promote decentralization and foreign investment, precipitated the resettlement camp of Botshabelo, a black informal settlement some 50 kms from Bloemfontein, whose abject poverty and living conditions have received international media coverage.

East London/Mdantsana/Gompo:

This Eastern Cape border town is an example of a planned metropolitan area in terms of the government's National Physical Development Plan (South Africa. Department of Planning and Environment, 1975). This urban area whose black township of Gompo, formally Duncan Village, is encircled by white residential and industrial land, incorporates a small portion of the Ciskei and is close to the Transkei, both TBVC States. The lack of growth initially anticipated by the government's decentralization and Bantustan policies has in fact resulted in white disinvestment and depopulation. This has resulted in economic depression and social deterioration.

Empangeni:

This one time small town has grown markedly in a very short space of time. It is an example of an outlying principal town in Natal.

George:

Together with Knysna, the George municipal area is identified by the National Physical Development Plan (South Africa. Department of Planning and Environment, 1975) as a growth pole. Identified in tourist brochures as the heart of the Garden Route, this regional centre of the southern Cape has suffered economically from the construction of a provincial road which by-passes the town. The informal settlement of Lawaaikamp has been involved in confrontations with the authorities regarding re-settlement to Sandkraal, a considerable distance from much needed employment opportunities. The State forestry plantations and sawmills provide employment opportunities to a range of unskilled and semi-skilled labourers as well as considerable resources for building and related sectors.

Knysna:

Situated on a banks of the Knysna lagoon, a fragile natural system, industrial and economic opportunities in this area rely predominantly on the natural resources of the area and its tourist appeal. Growth and development in this area could adversely affect the sustainability of these resources.

Kroonstad:

Together with Welkom this town is considered a principal town in North Western Free State. This town is situated on the National highway to the Cape and vehicular transportation through this town at peak times is cause of considerable concern for local residents who do, however, rely on this route for passing trade.

Ladysmith:

This town in the Natal Midlands suffered extensive damage from recent floods. The critical need for the development of forward planning proposals to prevent the same scale of destruction to both natural and built environments, suggested that this region be included in the study.

Port Elizabeth/Uitenhage:

This existing metropolitan region in the Eastern Cape has experienced considerable economic depression due to the re-location of the motor industries to other centres in the country. The potential environmental impacts of industrial activity in this region, its history of political unrest, as well as recurrent floods and droughts identified this region for inclusion in this study.

Pietersburg:

Situated in the far north of the country, in an area known for its political conservatism, Pietersburg is the main concentration point for the PWV development axis and is a potential growth pole in terms of the National Physical Development Plan (South Africa. Department of Planning and Environment, 1975).

Queenstown:

The functional region of this outlying inland town includes two of the TBVC States, namely, Transkei and Ciskei. It was anticipated that the problems and solutions raised by this research would be particular to its geographic location and its distance from metropolitan regions.

Rustenburg:

Situated in the Western Transvaal and distinctly separate from the PWV metropolitan complex, this principal town is bordered by Bophuthatswana and its contentious but popular gambling facility. Traditionally, the economy of this region has relied on agriculture and mining, which are subject to market fluctuations.

Steytlerville:

The active engagement of the Non-Government and Community Organisation ROEP (Red Ons Eie Platteland) in promoting environmental awareness and education in areas experiencing severe economic depression, environmental deterioration, depopulation as well as the loss of its built heritage and traditional lifestyle, could not be ignored by this research.

Verulam:

This small coastal town is essentially a commuter town to, or dormitory suburb of, the Durban metropolitan region, and is controlled by an Indian local authority.

3.5 TARGET GROUP

3.5.1 GENERAL

Broadly defined, the target group for the interviews consisted of government officials as well as representatives of professional bodies and Non-Government and Community

Organizations responsible for, or affecting, the resolution of urban environmental problems.

Justifications relating to the identification of the target group are given in Chapter 2 Item 2.3.

3.5.2 PROBLEMS ENCOUNTERED IN IDENTIFYING AND CONTACTING REPRESENTATIVES

3.5.2.1 Government Officials

It was generally difficult to identify the range of government authorities responsible for an urban area. Some reasons for this situation were discussed in Chapter 2, Sections 2.2 and 2.3. This situation was further complicated by the recent introduction of Regional Services Councils (RSCs) at the local level. Furthermore, a generally limited awareness and understanding of environmentally related legislation and issues restricted initial conversations with potential participants.

3.5.2.2 Professional Bodies and Acknowledged Experts

Initial contact with this group was relatively easy. However, as this group operates predominantly in the private sector and no financial remuneration could be offered to participants, some were reluctant to commit themselves to exact dates and times.

3.5.2.3 Non-Government and Community Organizations

The difficulties experienced in identifying these diverse groups was rather more complex. Non-Government and Community Organisation involved with *inter alia*: The protection of historical buildings or precincts; indigenous vegetation or nature areas and; atmospheric pollution, enjoy support from the general public (mainly white or more affluent pressure groups) and receive media coverage. They were therefore easier to contact.

However, other Non-Government and Community Organizations were identified only through an understanding of both the management and control of urban environmental resources and the process of urbanization in South Africa. These Organizations deal

more specifically with the considerable homelessness and insecurity of urban communities and their lack of access and mobility within the urban economy. In the South African context these are politically volatile issues. These Organizations were therefore severely restricted by the State of Emergency operating in the country at the time of the research and were therefore less accessible to research workers. A number of representatives of civic action groups were at the time of the research either in detention, or hiding from the authorities, and were therefore difficult to contact. Extensive "networking" was therefore necessary.

As mentioned previously, the research was funded by a quasi-government organization. Participants were informed of this at the outset. This situation posed a dilemma to both the research process and to potential participants. It was necessary for certain participants to establish the credibility of the researchers and the research process as well as the intended outcome of the research work. (Babbie 1973: pp352,353) This credibility was established prior to interviews being conducted, through personal meetings with the participants in question. The intended outcome of the research was thereafter amended to ensure that the final document, intended initially for local authority use, could also be made available to all participants as well as to other organizations not in the target group.

3.6 SURVEY DESIGN

3.6.1 SEMI-STRUCTURED INTERVIEWS

In view of the broad range of professional and practical expertise of the target group and the issues embraced, it was decided to conduct semi-structured interviews with all participants based on identical questionnaires. These questionnaires, which were sent to all participants prior to their interview dates, were developed around a core of open-ended questions. Interviews were designed to last approximately one hour. To facilitate communication and to maximize this time, it was decided to record the interviews on audio cassettes for latter transcription. (Dixon and Leach, 1977: p4)

3.6.2 RECORDING INTERVIEWS

When setting up the interviews, participants' permission to be recorded was requested. In the given political and economic climate and general rationalization of government departments, it was understandable that representatives of Non-Government and Community Organizations as well as certain local authority officials were initially reluctant to be recorded. However, once absolute confidentiality of all interviews was assured, all participants gave their permission to be recorded. The transcriptions of these interviews remain confidential and the property of the Department of Environmental and Geographical Science at the University of Cape Town. A list of all participants is included in this report as Annexure E.

3.7 SETTING-UP INTERVIEW SCHEDULES

3.7.1 CONTACTING TARGET GROUPS

All potential participants, broadly defined and identified in Sections 1.2.4 and 3.5.1 respectively, were contacted telephonically, and interview dates were set. Problems encountered in this process are mentioned in Section 3.5.2 of this Chapter.

A letter confirming the arrangement for an interview and explaining the background, funding and conceptual approach of the research was sent to all participants (Annexure A).

3.7.2 SUPPORTING DOCUMENTATION

The following supporting documentation was attached to the introductory letter:

- Extracts from the Draft Environment Conservation Bill published in October 1987, (Annexure B);
- Orientation Document mentioned previously (Annexure C);
- Questionnaire to be posed to participants (Annexure D).

Due to postal delays, supporting documentation did not always reach participants prior to the interview date. Inadequate preparation time did slightly compromise some input. Although participants were encouraged to submit additional written responses to matters discussed in interviews, few took advantage of this opportunity.

3.8 CONDUCTING AND TRANSCRIBING THE INTERVIEWS

Interviews were conducted at the offices or homes of the participants. Most interviews were conducted on a one to one basis although some participants did request that additional representatives of their organization be present. Although this did broaden the base and expertise present at the interview, these interviews generally became more formal and some participants were reticent to speak openly in front of their colleagues or committee members.

Township unrest, a daily occurrence at the time of the fieldwork, resulted in some interviews with representatives of both government and Non-Government and Community Organization being cancelled without prior warning. Interview schedules were tight and where representatives of any group were not able to make pre-arranged meetings, it was difficult to re-schedule interviews, although every attempt was made to do so.

A total of 70 interviews were conducted by two researchers and later transcribed onto computer disks using MSWORD, a basic word processing programme. It was essential for this to be done by the two interviewers only, to ensure the confidentiality of all participants. These audio cassettes, disks and print-outs remain the property of the Environmental and Geographical Science Department at the University of Cape Town and are confidential.

In retrospect, a data based package, as opposed to the word processing one used, would have greatly accelerated both the identification of problems and solutions, as well as the overall analysis and evaluation of the responses (Section 3.9 and 3.10 respectively).

3.9 PRESENTATION OF FINDINGS

3.9.1 IDENTIFICATION OF PROBLEM-AND-SOLUTION GROUPINGS FROM TRANSCRIPTIONS.

Problems, and solutions where given, were identified from the transcriptions. This resulted in an unwieldy and inaccessible body of information regarding the resolution of urban environmental problems. In this format, the data would be of little use to government authorities, local practitioners and Non-Government and Community Organizations. Structuring and classification of the data was therefore required.

Each problem-and-solution grouping was numbered. These numbers were employed purely as identifiers to assist with the development of a classification system and have no bearing on the final evaluation and analysis of the findings (Sections 3 and 4 of Botha and Weinronk, 1990).

3.9.2 DEVELOPMENT OF A CLASSIFICATION SYSTEM

Based on both an understanding of human settlement, and arising from an evaluation of the problems and solutions, 7 broad topics of concern were thus identified. The development and intrinsic hierarchy of these themes is the subject of Chapter 4. (See Section 4.2)

Approximately 1000 problem-and-solution groupings were assigned within the classification system. This is fully documented in the research report "Practical Implementation of Balanced and Legally Appropriate Environmental Policies by Local Authorities", (Botha and Weinronk, 1990) Sections 3 and 4. In the final document (Section 5) of the above-mentioned multi-volume report, the role and responsibility of central and local authorities are identified. Copies of these documents may be consulted at the Environmental and Geographical Science Department at the University of Cape Town as well as at the HSRC head office in Pretoria. Sections 4 and 5, mentioned above, form the basis of Chapter 5 of this document.

3.10 ANALYSIS AND EVALUATION OF THE FINDINGS

The findings reflected in Section 4 of the above mentioned set of documents, were analyzed to establish the nature of "over-arching" issues, and the common perceptions that exist among the broad range of participants. In Chapter 4, these perceptions are classified and linked to Maslow's hierarchy of human needs. The classification system contains 7 major categories.

In Chapter 6, the findings represented in these categories are evaluated against the foundations for the determination of a national policy for environmental conservation as contained in the Environment Conservation Act.

CHAPTER FOUR

DEVELOPMENT OF A CLASSIFICATION SYSTEM

It is not always possible to advance step by step; to arrive at a good theory may call for as much boldness as imagination.

Kaplan 1964: p326

4.1 INTRODUCTION

This Chapter deals with the development and structuring of a classification system for entering problem-and-solution groupings that emerged out of the interviews. The summaries of these problem-and-solution groupings are presented within the framework of this classification system in Chapter 5 following.

4.2 DEVELOPMENT OF A CLASSIFICATION SYSTEM

The wide ranging and often unexpected nature of responses to the questions posed (Botha and Weinronk, 1990: p74), confirmed the notion that a flexible approach to the process of the research, and indeed to the classification of problem-and-solution groupings based on the responses of participants, would be the most relevant approach to adopt.

Both the literature reviews and the findings of the research indicate that underpinning ideologies as well as structural mechanisms and legal foundations of local, provincial and national authorities play a central role in creating, and thus resolving urban environmental problems. (Hulley, Hall and Pullen, 1988: p10; Environmental Monitoring Group, 1991: p74; Botha and Weinronk, 1990: p74) Two matters are nevertheless paramount.

First, in most of the developing world, informal human settlement and the associated creation of shelter generally occurs with little regard for, or consideration of, formal government policies, or the provision of infrastructural services. (Haarhof, 1987: pp2-5)

Second, the resolution of urban environmental problems is directly linked to the extent to which basic human needs are addressed.

Both parameters suggest humans must first meet their most basic physiological needs before they will respond to higher needs (Maslow, 1968). Maslow identified several levels of human need and contended that each consecutive level must be satisfied before the next level can be embarked upon. Such a human-needs-approach is currently favoured by many and diverse international development agencies (du P le Roux, 1986: pp4,5).

Although a definitive analysis and method of application for this approach are part of an ongoing debate, there is little doubt that the most basic human need includes shelter, sanitation, health, and nutrition otherwise commonly referred to as physiological needs. (Burki, 1981: p170)

Environmental conservation in South Africa has been criticized for satisfying the higher needs of the already affluent population, and for ignoring the needs of the poorer and disadvantaged sectors of the community. (Khan, 1989: p37). To partially address this criticism as well as to accommodate the wide range of problems identified by participants, the classification of urban environmental problems based on Maslow's hierarchy of human needs would provide a useful tool if implemented.

The Basic Needs Approach to South African development has been proposed by du P le Roux and Møller in their papers entitled "The Relevance of the Basic Needs Approach to the South African Situation" and "Rural Blacks Perceptions of Basic Needs Fulfilment" respectively (du P le Roux, 1986: pp4-8; Møller, 1986: pp9-20). Furthermore:

... (A) nation's first duty is to fulfil the lowest needs on the Maslow hierarchy for its population such as security, food and shelter (Sunter, 1987: p49).

There are, however, five primary levels in Maslow's hierarchy: physiological, security, social, ego and self-realization (Jooste, 1984: p35), and each of these levels must be accommodated in addressing the resolution of urban environmental problems. Maslow's hierarchy of needs thus forms the basis for the presentation of the findings of this research.

An analysis of these findings indicated seven broad themes of urban environmental problems which are linked to Maslow's hierarchy of human needs in Table 4.1. The linkages between Maslow's hierarchy and the urban problems addressed are outlined in the table. However, it should be appreciated that the linkages outlined are not mutually exclusive.

TABLE 4.1 **ASSOCIATION OF MASLOW'S HIERARCHY OF NEEDS TO URBAN ENVIRONMENTAL PROBLEMS IN SOUTH AFRICA.**

MASLOW	URBAN ENVIRONMENTAL PROBLEMS
Physiological	Housing; Waste; Health
Security	Planning
Social	Education
Ego	Public Participation
Self-realization	Recreation

Although it would be convenient to assume that all factors constraining the accommodation of physiological needs must be resolved before embarking on the accommodation of security needs, and that these needs must be accommodated before embarking on the accommodation of social needs and so on, a process of development has to anticipate the eventual accommodation of all higher levels of need. Therefore, the order of presentation of the findings in Chapter 5, which incorporates the process of urban settlement, development and growth, differs slightly from a precise adherence to the order outlined in Table 4.1.

The essential impact of the process of informal urbanization currently being experienced in South Africa is that people settle and create shelter on any land perceived to be available, irrespective of access to infrastructural services, local employment opportunities, transportation systems and the legal right to tenure or ownership. This is evidence of man's critical need to attempt to satisfy his most basic Physiological needs, thus Housing issues form part of, and are linked to, the first level in Maslow's hierarchy of human needs. These attempts to satisfy basic Physiological needs are accompanied by the diverse environmental impacts associated with the production of Wastes by urban communities.

Waste related issues are therefore also linked to the accommodation of Physiological needs, the first level of Maslow's hierarchy.

In the urban context, the management and control of, and forward planning for, the impacts of human settlement and development on the environment, become necessary to ensure the sustainability of their environment and the accommodation of Security needs for urban communities. Hence, Planning, which deals with the accommodation of Security needs, addresses the resolution of financial, hierarchical and legal constraints. It also deals with the development of a policy framework, underpinned by an appropriate political ideology which establishes affordable and sustainable standards and zoning policies. This is the second level of Maslow's hierarchy of human needs.

As Planning authorities are entrusted with the responsibility to ensure the accommodation of Security needs as well as the protection and controlled utilization of the environment, their credibility among the public they purport to represent, is essential. Within an environmentally responsible approach to the resolution of urban environmental problems, this credibility is reliant upon planning authorities providing adequate opportunities for inclusive Public Participation. The ability of the public to participate responsibly in matters directly affecting their environment and hence quality of life, is linked to the degree to which Ego needs: Maslow's fourth level of hierarchy of human needs, are satisfied.

Once attempts to deal with basic needs, human rights and environmentally sound planning processes are initiated, the provision of social services needs to be addressed by relevant planning authorities. These social services include Health, Education and Recreation which are linked to the accommodation of Physiological, Social and Self-realization needs - the first, third and fifth levels, respectively, of Maslow's hierarchy of human needs.

CHAPTER 5

PRESENTATION OF THE FINDINGS

5.1. INTRODUCTION

This Chapter presents the problems experienced at the local level of government identified by the participants. The presentation of suggested solutions to these problems will, wherever possible, identify the role and responsibility of the level of government authority perceived by the participants to be responsible for their resolution.

The findings are based on the interviews conducted in 1988. It has been decided not to attempt to update these findings in terms of the current and on-going changes in the South African Nationalist Party Government's political ideologies, related legislation and respective policies. The reason for this decision is that although most of the legislation identified by participants as being environmentally destructive has now been repealed (1991), government authorities still face (and will continue to face) the repercussions and implications of past adherence to this legislation in their attempts at resolving urban environmental problems in South Africa.

This Chapter presents the findings of the research within the classification system presented in Chapter 4.

5.2 HOUSING

5.2.1 AVAILABLE LAND - HUMAN CONSTRAINTS²

In the current context of rapid urbanization of predominantly disadvantaged communities in South Africa, critical shortages of land for housing are being experienced. The Group Areas Act and the various Land Acts are cited as the legislation most inhibiting the ability

² The problems and solutions regarding human constraints on availability of land for housing were discussed by more than half the representatives of all three groups interviewed.

of local government authorities and the population to satisfy their basic physiological needs. The enforcement of this legislation has led to involuntary removals to degraded or sensitive environments, enormous homelessness, overcrowding and insecurity, insufficient infrastructural services and low standards of health, minimal access to allotments³, loss of public open space, social disintegration and general deterioration of the social, physical, natural and built environments.⁴ Furthermore, applications for deregulation of urban agricultural land to middle income white residential land, represent the permanent loss of a valuable resource, whose future use as white residential land is perceived as inappropriate to the accommodation of basic needs for the majority of urban dwellers, i.e. blacks.

Solution

The commitment of local authorities to house their constituent communities and to ensure that the basic physiological needs of these communities can be satisfied, is critical to the conservation and management of the urban environment.

Local authorities dealing with housing should be de-segregated and disabling legislation regarding these issues should be repealed. This would endorse the commitment of central government in respect of the successful implementation of the Environment Conservation Act.⁵

Some interim practical solutions suggested are:

- Under-utilized State owned land that is appropriate for residential purposes⁶ should be apportioned to local authorities so that housing needs can be met;

³ In the past, subsistence farming in peri-urban areas would enable disadvantaged communities to supplement their income and thus represented a way for these groups to promote their own economic mobility.

⁴ These implications are dealt with under various Sections of this classification system and are therefore not cross-referenced in this instance.

⁵ Intrinsic to this legislation is the notion of sustainable development and the promotion of the quality of life of all South Africans.

⁶ The environmental stability, proximity to work opportunities, viability of infrastructural provisions and the implications of appropriating present land use should be evaluated.

- Non-Government and Community Organizations dealing with basic physiological needs should exert pressure upon central government to negotiate alternative strategies for the provision of land for housing;
- A contract-system⁷, disconnected from any political ideology, that assures some measure of permanent status to informal sector dwellers should be initiated;
- A truly regional approach by local authorities would enable some much needed redistribution of land⁸ and resources to occur;
- Local legislation (by-laws etc) should stipulate the condition that alternative accommodation for existing residents be found before proposals for upgrading are approved;⁹
- The most appropriate use of resources would be to house the lowest income group closest to employment opportunities;
- Should it be appropriate to de-regulate urban agricultural land for housing, the provision of housing for the lowest income group should take preference over re-proclamation of land for middle income white residential land.¹⁰
- Evaluation of applications for de-regulating urban agricultural land should consider the long term implications of permanently losing this resource.

⁷ *Promesas de compraventa* (contracts) are operative in some South American "Barrios" with semi-legal status and are discussed in Gilbert and Ward, 1985: pp77-82,273.

⁸ De-regulation of land set aside for whites, where housing shortages are less critical. Housing shortages in the white population group generally deal with affordability and not access to land.

⁹ Urban upgrading in the United Kingdom is subject to the provision that similar accommodation, at similar rental, in similar location must be found for existing registered tenants before upgrading proposals will be approved. This provision although inadequate to the overall intention of the policy which was to promote the economic mobility of disadvantaged urban communities in the United Kingdom, does assure that provisions for basic physiological needs are made (Pacione, 1990).

¹⁰ These applications seem to be motivated by present property market values, and are not made because urban agriculture is not financially feasible in itself.

5.2.2 AVAILABLE LAND - NATURAL CONSTRAINTS¹¹

Settlement by both the formal and informal sectors on environmentally sensitive, unstable and hazardous land¹² is financially, socially and morally costly. Land rights, which legalise the nature of formal development in these areas, were granted in an era when the implications of environmentally inappropriate land use were generally not understood or valued. Adherence to these rights has and will continue to result in either the deterioration and eventual loss of these sensitive and valuable systems, or in increased cost and risk to present and future residents.

Solution

Local planning authorities should ensure environmentally compatible land use. Feasibility and affordability studies with respect to either the deterioration or the permanent loss of these environments should be evaluated in terms of the long term costs to residents¹³, the broader South African population and the environment.

Central government should expedite the necessary changes to existing land use planning legislation that arise from an appropriate evaluation¹⁴ of environmentally sensitive, unstable and hazardous land in all urban areas.

The establishment of a "Bulk Rights" bank would protect these areas in perpetuity. Through this bank, the government would be able to buy or exchange existing land rights

¹¹ This issue was only mentioned by 9% of all participants.

¹² Sensitive, unstable and hazardous environments identified include wetlands, estuaries, flood plains, post operational landfill sites, undermined land, unstable geological systems.

¹³ Widespread use of these areas for low income housing result in unnecessary and ill-affordable high maintenance costs to individual residents. By the time that the implications of these actions are manifested, guarantees and responsibility of the Developers have generally long since lapsed.

¹⁴ The Council for the Environment's "Integrated Environmental Management in South Africa" should be consulted and the relevant procedures initiated to identify all relevant areas (Council for the Environment, 1989).

that are in conflict with appropriate environmental planning. The use of national finance in this regard would be justifiable to present and future South Africans.

5.2.3 DENSITY¹⁵

The enforcement of conflicting legislation regarding access to land and housing has resulted in unacceptable overcrowding and urban sprawl.

Solution

Central government needs to accept primarily the responsibility for the implications of their enforcement of environmentally destructive legislation. Although increased urbanization is an international trend, it should be accompanied with appropriate strategies to stem the depopulation and retrogression of rural areas.

The adequate provision of smaller serviced township developments within urban areas, with sustainable standards and reduced actual densities (see also footnote 17), would be more likely to promote a sense of identity and responsibility.¹⁶ The layout of these townships should maintain minimum service runs. A successful precedent in Southern Africa was the World Health Organization's intervention in Zimbabwe which stipulated plot sizes of maximum 100 square metres with conveniently located allotments.¹⁷ The successful handling of these issues by government authorities could affect people's perceptions and values.¹⁸

¹⁵ This issue was addressed by predominantly Non-Government and Community Organizations (30%). Only 5% of government officials interviewed discussed this problem. No individuals made reference to density issues.

¹⁶ This responsibility refers both to the environment and to each other.

¹⁷ These erf sizes are considerably smaller than erf layouts in existing black townships where theoretical densities should therefore be lower. However, real densities are far higher as back-yard shack dwellers have no alternative options and further, provide additional income for registered tenants.

¹⁸ Presently, disadvantaged communities are opposed to living in medium to low rise developments. If the environmental implications of continued natural urban sprawl were communicated to these people, it might well be possible to alter their attitudes. However, it should be appreciated that people who have been so disfranchised and forcedly removed from the land would not readily give up the opportunity to own land.

5.2.4 FINANCIAL POLICY¹⁹

Economic strategies based on the South African Nationalist Party Government's political ideology²⁰ severely limit the affordability of housing and the maintenance of the built environment. There is no visible commitment to changing housing and financial policies to enable local authorities to accept the responsibility invested in them by the Environment Conservation Act.²¹ Moreover, there are no incentives to incorporate local semi- or un-skilled unemployed people in the construction of much needed housing.

Solution

Central government should not be allowed to abrogate their responsibility for the provision of basic shelter and services for disadvantaged communities. National funding allocations need to be re-distributed to enable local authorities to attempt to satisfy basic physiological needs in this sector of the society.

More specifically, the National Housing Fund should be de-segregated and the administrators of this fund should adopt a conceptual framework that provides long term cost savings. A broadly based approach would be for central government to provide a basic "wetcore"²² with consolidation of this core being reliant upon the initiative and resources of the user.

This approach should be accompanied by the replacement of the National Building Regulations and standards with environmentally appropriate performance criteria.

¹⁹ At least 75% of Non-Government and Community Organizations and 85% of individuals interviewed, raised these issues. However, their concerns were shared by only 25% of government officials interviewed.

²⁰ see Footnote 48.

²¹ Sustainable development and the addressing basic of needs are integral to the successful implementation of the Act.

²² "Wetcore" concept means the provision of basic sustainable infrastructural services and minimal shelter. This has been used internationally in many underprivileged situations, with positive results.

Permission to test and use innovative building techniques and materials should be encouraged in the private sector as well as in the disadvantaged sector of the population.

Local authorities should insist on the use of local labour for large housing contracts. This should be done with the expressed intention of promoting appropriate skills in an otherwise predominantly unskilled and unemployed labour resource. Financial incentives to the private sector for implementing environmentally appropriate maintenance and development strategies, while not relinquishing the government of its responsibilities, would greatly enhance the resolution of urban environmental problems.

5.2.5 OWNERSHIP²³

The lack of ownership rights for land and housing reinforces a sense of impermanence and lack of security, and promotes exploitation and disregard for the environment, which in turn undermines the credibility of the Environment Conservation Act. Under present legislation, existing land rights have priority over environmentally related legislation.

Solution

In order to promote ownership and security and the relevancy of environmental conservation in South Africa, legislation impeding black ownership of housing must be repealed. Existing government controlled housing could then be sold to tenants at nominal cost and not in accordance with present market values.²⁴

Local authorities should use enabling legislation and financial incentives to require and encourage Shacklords²⁵ to observe environmentally sustainable performance standards.

²³ Almost half the Non-Government and Community Organizations interviewed were concerned about the lack of ownership opportunities and its impact on the resolution of urban environmental problems and the satisfaction of basic physiological needs. However, only 7.5% of government officials and 15% of individuals made reference to these impacts.

²⁴ Capital outlay for most of this housing, now approximately 40 years old, has long been recovered. Furthermore, minimal maintenance over the years has led to the considerable deterioration of these structures.

²⁵ These informal landlords charge exorbitant rentals and exploit the insecurity of disadvantaged communities.

However, care should be taken not to totally alienate these Shacklords as they operate beyond the jurisdiction of the law by providing much needed land for illegal informal settlements. These shacklords should be encouraged to employ a contract system²⁶ which formally grants access and security to tenants. This system should be endorsed by local authorities who should in turn assist the shacklords with the development and implementation of the system.

National legislation and finance that are to be implemented and administered respectively by local authorities, should be enacted to prevent the deterioration of sensitive and valuable environmental systems on private land.²⁷ This legislation should be written pro-actively and not retro-actively as rehabilitation of these systems and resources is costly and can take generations to implement.

5.2.6 STANDARDS²⁸

National Building Regulations and standards are too high for, and unaffordable to, the majority of South Africans and thus bear little relation to the South African context. An inappropriate over-utilization of scarce resources is expended to satisfy the aspirations of the affluent minority. The enforcement of the National Building Regulations in informal settlements and in white residential areas occupied by blacks,²⁹ is perceived as politically motivated as little is done to prosecute exploitative landlords who do not maintain basic standards in leased housing. Non-compliance with environmentally related legislation on the part of disadvantaged communities is generally perceived - rightly or wrongly - to be due to ignorance and disrespect for environmental conservation.

²⁶ See Footnote 7.

²⁷ This deterioration is a result of modifications to wetlands and floodplains as well as the removal of swamp, riverine, coastal and mountain vegetation communities which together, improve soil and water conservation.

²⁸ More than half the representatives of Non-Government and Community Organizations and individuals were acutely aware of these problems. Their concerns were shared by only 15% of government officials interviewed.

²⁹ Hillbrow's flatlands in Johannesburg are a prime example.

Solution

Affordable and appropriate building standards and regulations would be proof of central government's commitment to addressing human needs and environmental conservation. Environmentally appropriate and sustainable performance criteria should replace the National Building Regulations and other related legislation.³⁰

Local authorities have granted waivers on building regulations to large companies. Presumably, these waivers represent responsible deviations from the legislation. This lenient attitude should be extended to the advantage of those individual homeowners - disadvantaged or not, as the case may be - in order to upgrade their homes from their own resources. This should not, however, be seen as advocating the proliferation of badly built or unsafe dwellings.

Non-compliance with environmentally related legislation is in fact not an indication of ignorance or disrespect, but an inability to comply with the legislation because of limited resources, and the urgency to fulfil basic physiological needs.

5.2.7 ZONING³¹

Zoning schemes, which are peculiarly complex legal documents that are difficult to amend, tend to endorse and entrench a specialist approach to urban planning. This gives rise to dormitory suburbs that are sparsely populated during working hours, business districts that are abandoned after dark and industrial concentrations, the toxic pollutants of which are not immediately visible from other urban areas. As such they fail to satisfy basic physiological needs or create human environments.

³⁰ At all levels.

³¹ Problems regarding present zoning laws and policies were raised by 20% and 30% of government officials and Non-Government and Community Organizations respectively. No individuals commented on this issue.

Solution

Zoning schemes need to accommodate the dynamic nature of urban growth. Amendments and updating proposals should be developed in consultation with affected parties³² and endorsed by central government. This would enable planning authorities to exploit the locational advantages and functional relationships of contextualized development.³³

In the interim, local authorities should allow performance criteria to take precedence over statutory zoning laws. This would promote economic mobility and responsibility within constituent communities. Re-zoning applications should be processed at the local level, within an environmentally responsible framework.³⁴ This would expedite zoning application procedures thus minimizing the uneconomical utilization of resources.

5.2.8 CONCLUSION

In conclusion, repealing the Group Areas Act, the various Land Acts and the Housing Finance Act as well as establishing a land rights bank would enable local authorities to initiate and sanction environmentally appropriate housing proposals by re-allocating under-utilized land suitable for housing, reducing long-term consolidation and maintenance costs in respect of both urban communities and the urban environment. Moreover, broad ranging performance criteria regarding building materials, construction and standards, densities and zoning policies would promote the quality of life of urban communities and stem environmentally expensive urban sprawl.

³² This should include constituent and adjacent government authorities and the communities they represent.

³³ Lowest income groups should live closest to employment opportunities. Business rights and light industrial licenses should be granted in disadvantaged areas with provision being made for adjacent and neighbourhood residents to provide indications of acceptable intensity of and limits to these alternatives. Mixed-use areas (residential and business) would not only promote economic mobility but would improve security (day time presence) and enhance the quality of the environment.

³⁴ Which might well call for the input of higher authorities although this would not be a legal requirement.

The implementation of these solutions would lead to basic physiological needs (as defined by Maslow) being addressed and would minimize urban environmental problems related to the provision of housing.

However, the proposed solutions discussed in this section do not deal with all, nor exclusively physiological needs, but rather reflect the inter-relationships and wide ranging nature of urban environmental problems associated with housing. This reinforces the critical need to seek solutions that accommodate all levels of Maslow's hierarchy of human needs.

The following section, which deals with the management and control of urban Wastes, is also linked to the accommodation of physiological needs and therefore supports the nature of solutions discussed above.

5.3 WASTE³⁵

5.3.1 AVAILABLE LAND

The location and long term viability of waste disposal sites³⁶ are difficult to establish. Negative public perceptions and a failure to plan for the direction of urban growth are major constraints. Public perceptions of waste disposal sites are generally based on limited understanding of potential environmental impacts.³⁷ The direction of urban

³⁵ Generally, this category of urban environmental problems seemed to be relevant to only government officials and Non-Government and Community Organizations. Individuals tended to disregard the satisfactory provision of waste services in urban areas. Between 10% and 20% of government officials and Non-government and Community Organizations actually commented and proposed solutions. However, an evaluation of these percentages revealed that all participants whose professional and practical expertise coincides with waste related issues, did comment on them. This is perhaps an indication of the specialist nature of these issues as well as an indication of the lack of understanding regarding the impacts of waste mis-management.

³⁶ These include land fill sites and land based sewerage treatment plants.

³⁷ These environmental impacts include impacts of the natural, physical and social environments.

growth has generally not been anticipated with sufficient accuracy nor steered by careful forward planning, resulting in waste disposal sites being encircled by urban development.

Solution

Central government should promulgate national legislation to ensure that any future utilization of waste disposal sites are appropriate to their post-operational plans.

Local authorities should incorporate Integrated Environmental Management³⁸ procedures to ensure that the selection and locality of waste disposal sites are socially acceptable and environmentally sustainable. This would require local authorities to initiate public education programmes as well as environmental impact assessments.

Informal settlements on, or close to, environmentally sensitive areas should, with the necessary consultation of all affected parties, be either relocated or provided with sustainable infrastructural services.

5.3.2 FINANCE

Insufficient funds are allocated to local authorities to ensure that the high standards set regarding the provisions for and disposal of urban wastes, are complied with.³⁹ Within these financial constraints, recycling proposals, although environmentally constructive, are not feasible.

Solution

The allocation of funds by central government for the management and control of urban wastes needs to take cognizance of the different constraints and financial restrictions experienced by local authorities in metropolitan areas as well as those in outlying areas.

³⁸ As discussed in the Council for the Environment's document published in October, 1989.

³⁹ Notably local authorities in outlying areas where equipment requiring high capital outlay is used intermittently and cannot easily be shared.

All environmental costs, including social and health costs, should be incorporated into the formulae set for national waste legislation and regulations. Financial incentives for re-use or recycling of resources should be incorporated into such national legislation.

Regional Services Councils⁴⁰ need to identify ways of sharing the establishment, operational and de-commissioning costs related to the collection and treatment of urban wastes. In the current absence of national legislation, by-laws could provide financial and other incentives to local business and industry, schools and public organizations to encourage the re-use and recycling of resources, generally considered as waste.

5.3.3 HIERARCHY

The accountability of decision-makers to affected parties in waste control and pollution issues is generally limited.⁴¹ Conflicting resource utilization⁴² is subject to perceived priorities on the part of local authorities, without there being accountability to their constituent populations in respect of these priorities. Stated differently, since the constituents of local authorities are not consulted, nor are the constituents truly represented, the priorities of a local authority remain an enigma to the constituent populations. This would be an example of the ineffectiveness of non-responsible government, which in this case has environmental implications.

Solution

Central government should encourage input from local authorities and affected parties. It is anticipated that this would result in environmentally appropriate decisions being taken, which offenders would be more likely to support.

⁴⁰ Local authority structures in outlying areas. In the Cape, these Councils have replaced the Divisional Council structures.

⁴¹ National "auditors" appointed by central government are not bound to confer or consult responsible local authorities, let alone the affected public.

⁴² For instance the use of limited sweet water resources for disposal of industrial and domestic effluent, recreation and potable water.

Local authorities should take the initiative and make representation to central government concerning local waste and pollution issues. This representation should be based on an evaluation of input gained from affected parties, who should be informed of any further developments.

Improved communication between local and central government as well as affected parties would enhance the accountability of government officials dealing with waste issues.

5.3.4 STRUCTURE OF WASTE LEGISLATION

Neither national legislation, regulations nor local by-laws applicable to large metropolitan regions or urban areas in close proximity to the self-governing territories and the TBVC States are uniformly applied. This problem was identified with specific reference to littering as well as air and industrial pollution.

Solution

Environmental systems do not recognize political boundaries. Waste legislation should therefore be structured on an holistic and regional basis. Uniform legislation throughout South Africa would improve the clarity, implementation and effectiveness of waste legislation by local authorities and homeland administrations.⁴³ It would further promote greater co-operation of potential polluters. Local authorities should be required to pass environmentally appropriate by-laws for waste management.

Whether national or international, standards and provisions that have been successfully applied should be adapted and incorporated into national waste legislation.

Local authorities need to appreciate the value of an informed public. Clear and environmentally appropriate standards are needed to promote public awareness, understanding and support. International, and where appropriate, national precedents should be consulted in the formulation of these standards.

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Self-governing territories and TBVC States.

5.3.5 IMPLEMENTATION OF WASTE LEGISLATION

Waste legislation is often found to conflict with other legislation or national policies and often lacks compatibility with, or affinity to, the aspirations of the general public.

Solution

National waste legislation needs to be reviewed and amended regularly to ensure that it is in line with other related legislation and national policies.

Local authorities should consult would-be offenders and government officials dealing with waste management at other levels of authority, in order to promote co-operation and thereby the successful implementation of waste related legislation.

5.3.6 PROSECUTION WITH REGARD TO WASTE LEGISLATION

Prosecutions are generally not supported by local authority councils and the general public. Financial constraints limit the manpower available to ensure proper implementation of waste related legislation. Penalties are not generally directed at encouraging future compliance with relevant waste legislation.

Solution

It is advisable for there to be a clear distinction between the roles and responsibilities of local authority officials on the one hand, and local authority councillors on the other.

Central government should allocate additional funds to local authorities to enable them to employ sufficient manpower.

Waste legislation needs to be clear and enforceable in order to be effective. Local authority councillors as well as the general public need to understand the potential short and long-term impacts of waste mis-management. With this in mind, the respective roles and responsibilities of local authority officials and councillors should be sufficiently distinct, one from the other, to enable the former to prosecute offenders with some measure of consistency.

Prosecutions in terms of waste related legislation would benefit from there being a more positive approach when it comes to issuing or imposing penalties. "Polluter-pays" principles and community service penalties should be written into national and local legislation.

Available manpower needs to be constructively employed in ensuring proper implementation of waste legislation. Penalties need to incorporate "polluter-pays" principles which would lead to a more equitable distribution of the costs incurred at reducing pollution levels. Community-service, rather than monetary fines, as penalty for an offence, would promote a more direct relationship between polluters and the affected public.

5.3.7 STANDARDS

Waste legislation does not reflect an understanding of the inherent constraints and opportunities regarding the provision of basic physiological needs for predominantly disadvantaged or migrant communities. Government officials also seem to be lacking in their awareness of the range of problems and constraints faced by these communities. Standards relating to the management, control and utilization of stormwater, groundwater and effluent are specifically mentioned by participants.

Solution

Central government should ensure the dissemination of information and the publication of all research results funded by them, to all levels of authority and to the general public.

Central government authorities should also develop either performance criteria or sustainable, yet flexible, standards to enable compliance by all levels of government authority throughout South Africa.⁴⁴

⁴⁴

South Africa is a country of great diversity in terms of its topography, climate, rainfall, population densities and income levels. One particular issue mentioned in this regard was the treatment of stormwater run-off and the exploitation of underground water.

Local authorities would be well advised to embrace an holistic planning scenario appropriate to the South African context. Important aspects are to:

- Give priority to providing for basic physiological needs (as defined by Maslow) of constituent communities;
- Promote communication and co-operation between the private sector and higher levels of government authority, and to pressurize the latter to improve conditions and standards;
- Commission research into appropriate and sustainable solutions. This research should incorporate an evaluation of international standards and solutions. Furthermore, this research should be on-going as packaging standards, alternative technological treatments for waste, and recycling opportunities are continually being improved.

5.3.8 ZONING

The diverse nature of Waste related zoning problems includes conflicts between private and public ownership of land that supports sensitive environmental systems and/or waste treatment sites. In addition, the persistent adherence of government authorities to commissioning raw sewerage marine outlets in preference to land based sewerage treatment plants was specifically mentioned by participants.⁴⁵

Solutions

Environmentally sensitive and ecologically critical natural systems should be protected by national legislation, with the maximum penalty being confiscation of land or the accompanying rights, whether ownership, tenancy or title deed.

Local authorities should incorporate Integrated Environmental Management procedures in the development of zoning diagrams, to minimize negative impacts.⁴⁶

Harmful hygienic and aesthetic impacts could be mitigated by the creation of "Buffer zones" between residential areas and waste disposal sites.

⁴⁵ This problem in fact deals with financial and land resources as well as public perceptions. Such problems could well be mitigated through better land use and zoning investigations.

⁴⁶ See also Section 5.2.2 Available Land.

5.3.9 CONCLUSION

In conclusion, the solutions reflected above range on the one hand, from the provision of adequate and sustainable infrastructural services for all urban communities to longer term protection and controlled utilization of environmental resources and systems within the urban context on the other hand.

These solutions suggest that legislation related to the management and control of urban wastes be understandable, consistent with other legislation and with the needs of urban communities, implementable and enforceable throughout the functional region and environmental systems affected by an urban area.

This would rationalize service provisions and financial costs, minimize abuse and promote environmentally responsible behaviour by both the authorities and urban communities thereby improving urban environmental qualities.

As such, these solutions attempt to satisfy not only some physiological needs (as defined by Maslow) but also to resolve the broader ranging environmental impacts relating to waste production in human settlements and urban development.

The availability of adequate Financial resources would clearly assist with the implementation of these solutions and matters relating to these resources are discussed in the following section.

5.4 PLANNING: FINANCE⁴⁷

5.4.1 STRUCTURE AND DISTRIBUTION

Funding allocations received from the State are directly related to government political ideologies and policies. These allocations manifest little consideration for the accommodation of basic physiological needs (as defined by Maslow) and indeed, reflect scant regard for the implementation of the Environment Conservation Act.

Duplicate and in some cases triplicate bureaucratic structures are an unnecessary financial burden on the resources of the country.

Solutions

Legislation perpetuating the unnecessarily segregated bureaucratic structure of administration should be repealed.⁴⁸

To ensure the successful implementation of the Environment Conservation Act, central government should encourage and provide financial assistance to local authority officials needing environmental education. Unless these officials have greater understanding of environmental systems, their constraints and opportunities, these officials cannot responsibly accept the authority invested in them by the Environment Conservation Act. Local authorities are faced with the enormous task of providing for basic physiological needs (as defined by Maslow) of their constituents. In the light of limited funding allocations from central government, local authorities should give preference to new developments with potential positive consequences for disadvantaged communities⁴⁹ and

⁴⁷ Two-thirds of the target group and an equal percentage of each group raised the issues presented in this section and thereby indicates the relevance of these constraints on attempts to resolve urban environmental problems.

⁴⁸ The primary research reflected in this study was undertaken in 1988, prior to any changes in the South African political scenario, legislation and its structures.

⁴⁹ These would include projects that promote skills, job opportunities and economic mobility of local populations.

the environment.⁵⁰ In large metropolitan areas, constituent local authorities should rationalize resource utilization, such as manpower, expertise and equipment.⁵¹

5.4.2 DISADVANTAGED COMMUNITIES

Disadvantaged communities, who are struggling to meet their basic needs, do not generally give priority to environmental conservation. Local authorities acting on behalf of these communities are therefore not able to generate sufficient funds for environmental conservation since their constituents do not generally own land, nor do they enjoy infrastructural services (water supply, waste disposal, electricity etc), and thereby do not provide a viable source of revenue to the local authorities. In fact, central government's adherence to the costly policies of separate development in South Africa are seen to be a waste of valuable financial resources. The Financial Relations Act, Physical Planning Act and the Housing Finance Act were noted by most participants as being responsible for the misuse of these resources.

Solution

To demonstrate their commitment to the Environment Conservation Act, central government should amend the above mentioned legislation.

It would be both appropriate and advantageous for all government structures operating at the local level to co-ordinate the financial resources of an urban functional region.⁵² Local authority decisions should favour projects that would promote the economic mobility of their constituent communities and real development in their region.

⁵⁰ In both scenarios, financial incentives from central government would be viewed as an appropriate mechanism through which to promote social upliftment, sustainable development and environmental conservation.

⁵¹ A number of outlying local authorities included in this study have successfully initiated informal procedures in this regard.

⁵² See Chapter 2 Section 2.2.3. for specific components and justification for adopting this framework.

5.4.3 RATES

Improvements to the physical and built environment by landowners and the promotion of job opportunities by employers are rated and taxed by local authority structures.

Solution

Central government should investigate the feasibility of introducing rates on a sliding scale with specific reference to rural areas and agricultural land as well as tax incentives for positive environmental initiatives.

Private sector initiatives regarding the conservation and management of the built and physical environment as well as the promotion of economic mobility of disadvantaged communities, should be encouraged by local authorities.

5.4.4 CONCLUSION

By de-segregating local authority structures and financial policies, central government would demonstrate its commitment to the successful implementation of the Environment Conservation Act and would enable local authorities to accept the responsibility invested in them by this legislation.

Financial resources currently used to maintain these structures could then be re-allocated, co-ordinated and utilized to promote awareness and understanding of environmentally related legislation and environmental issues in all sectors of the urban population, as well as to develop appropriate and sustainable solutions to urban environmental problems.

This would significantly enhance the credibility of local authorities thereby addressing the security needs (as defined by Maslow) of their constituent populations. These constituent populations would thus be assured that scarce resources are not being exploited to satisfy environmentally costly policies of separate development, but are being used instead to resolve urban environmental problems and address human needs.

These solutions are, however, further dependent upon local authorities being given power in real terms as well as recognition from central government to implement these solutions. The following section discusses Hierarchical issues relating to the resolution of these problems and the eventual accommodation of human needs.

5.5 PLANNING: HIERARCHY⁵³

5.5.1 POLITICAL BOUNDARIES

Political boundaries are generally established with little consideration of existing environmental systems.⁵⁴

Solution

It is only central government that can intervene to bring these boundaries in harmony with existing environmental and functional systems.

Political boundaries within an urban area would thereby ideally reflect the functional region of which they are a part. The concept of functional regions could also be broadened to include natural systems within and surrounding these functional regions.⁵⁵

In the absence of a more environmentally appropriate management framework, local authorities within an urban area or region should encourage communication and foster co-operation so as to mitigate the effects of this politically imposed dislocation, (whether these are local authority boundaries or boundaries between the Republic of South Africa

⁵³ These issues were raised by all participants as directly constraining the resolution of urban environmental problems.

⁵⁴ These environmental systems include natural entities or systems such as vegetation communities and river basins and their catchment areas, as well as human networks and infrastructure, such as settlement patterns, transportation networks and economic generators.

⁵⁵ See chapter 2 Section 2.2.3 for discussion on urban functional regions.

and the TBVC states and self-governing territories). Common needs, resources, goals and opportunities should be capitalized through joint management policies and actions.

5.5.2 DEVOLUTION OF AUTHORITY

Although devolution of authority has been promulgated in a number of Acts, local authorities are still bound to consult with, and can be overridden by, central government.

Solution

Clarity of intent by central government is essential. A clear hierarchy of decision making and the stipulation of the authority bearing ultimate responsibility for decisions taken, would not only assist government structures, but would further encourage the much needed support of local populations. Concurrent with the above, guidance and assistance from central government would encourage the successful implementation of devolution to local authorities.

The credibility of local authorities is essential to the successful restoration of public co-operation. The approval of structure plans and similar structural mechanisms by local authorities should be achieved within an acceptable and recognized process.⁵⁶

5.5.3 CONFLICT RESOLUTION

There are no mechanisms for conflict resolution between the various tiers of government and between government departments.

Solution

Both local and central government bodies need to develop a forum for conflict resolution in as much as this would streamline procedures dealing with the resolution of urban environmental problems.

⁵⁶

Integrated Environmental Management procedures should be consulted. See Council for the Environment publication on "An Approach to a National Environmental Policy and Strategy for South Africa".

5.5.4 EFFECTIVE INTERVENTION

The lack of co-ordinated intervention by government authorities in dealing with the resolution of urban environmental problems severely limits the effectiveness of their actions.

Solution

Central government should appoint "environmental auditors" who would be ultimately responsible to both central and local governmental bodies within a functional region.

Joint management policies in a functional region at the local level should incorporate all matters relevant⁵⁷ to the urban environmental scenario (see also footnote 54).

5.5.5 CREDIBILITY OF LEGISLATION

Local authority officials, committed to the resolution of environmental problems, prefer to invoke any other national legislation in preference to the Environment Conservation Act.⁵⁸ The political boundaries of TBVC States and self-governing territories and their resultant exclusion from accountability to South African legislation, further constrains the implementation of the Environment Conservation Act.

Solution

The hierarchy of legislation and ultimate responsibility of government authorities needs to be laid down by central government. In addition, central government, together with representatives of the TBVC States and self-governing territories, would be well advised to negotiate alternative mechanisms or reconsider existing legal structures to facilitate both co-operation and co-ordinated environmental intervention.

⁵⁷ These matters should inform the direction and definition of urban growth and the urban edge, soil and water conservation, treatment of urban wastes, agricultural resources etc.

⁵⁸ "Environmental legislation is generally regarded as being weak (guide plans), unclear (extent of jurisdiction, departmental authority and responsibility), unknown (committed to other priorities), over-ruled (hierarchy of legislation) and compromised by political ideology" (Botha and Weinronk, 1990: p37).

An informed local authority⁵⁹ is of immeasurable benefit to its local populations and to the resolution of urban environmental problems.⁶⁰

5.5.6 CONCLUSION

In conclusion, local authorities are entrusted with the responsibility of providing for the protection and controlled use of the environment. Therefore, the solutions proposed above, which deal with local authority jurisdiction, hierarchy, conflict resolution and ultimately, the credibility and effectiveness of environmentally related legislation, directly affect the ability of these structures to resolve urban environmental problems and to satisfy the security needs (as defined by Maslow) of the populations these local authorities purport to represent.

The following section, Planning Legal, deals with the Legal framework underpinning the implementation of the proposed solutions presented above and throughout this chapter.

5.6 PLANNING: LEGAL

5.6.1 STRUCTURE⁶¹

Legislation in South Africa is generally seen as:

- Unintelligible to government officials and informed members of the public;
- containing only retro-active penalties, i.e. no pro-active incentives;
- far too broad and general and thus not easily invoked;

⁵⁹ The majority of local authority officials contacted were unaware of the imminent promulgation of the new Environment Conservation Act, let alone its directives and legal hierarchy.

⁶⁰ See Section 5.5.1 on Political boundaries above.

⁶¹ All but one respondent commented on the structure of legislation and its constraints on the resolution of urban environmental problems.

- irrelevant to the needs of the population;
- inadequate in terms of the protection and controlled utilization of the environment;
- containing unrealistic standards that are both generally inappropriate to the socio-economic and overall South African context, and often outdated in terms of technological developments;
- having limited penalties for environmental transgressions.

Solutions

National legislation would have greater positive influence on the environment if it were:

- Written in clear language that would facilitate general understanding;
- preceded by a clear policy statement supported in the text with clearly defined goals and viable strategies;⁶²
- cognizant of the needs of the society;⁶³
- supported by educational material and relevant guidelines for implementation,⁶⁴ which should also be available to the general public;
- succinct, and if it integrated allied legislation;
- to promote pro-active and self-censuring measures as well as professional responsibility and discipline.

And if:

- Penalties in different districts⁶⁵ were more comparable thus preventing transgressors from merely re-locating;

⁶² In this context "viable" indicates not only manpower, skills and resources, but also authority and hierarchy. Government bodies, like the National Monuments Council, can only make recommendations and representation to the private sector and other government authorities as they do not have the financial resources or mandatory legal clout.

⁶³ To ensure this, such legislation should be reviewed and amended every 3 or so years.

⁶⁴ These guidelines and materials should make specific mention of mining activities, toxin producing industries and the disposal of wastes as well as sensitive environmental systems such as wetlands, coastal zones and estuaries.

⁶⁵ Falling under the jurisdiction of either different administrations or national authorities.

- penalties were to provide for either community service or forfeiture of property;
- compensation received from transgressors were re-invested in environmental management.

Without undermining their legal authority, local authorities could:

- Advertise and circulate all draft legislation to their officials and the public affected thereby;
- incorporate a measure of flexibility in the evaluation of innovative and clearly appropriate proposals that might be in conflict with the Town Planning Ordinances and Schemes;
- apply pressure on central government to ensure that the recommendations stated above are considered.

5.6.2 IMPLEMENTATION⁶⁶

The inadequate incorporation of the following seemingly diverse issues into environmental legislation compromises the implementation of this legislation (Environmental Conservation Act). This legislation is accused of being:

- Irrelevant to disadvantaged communities;⁶⁷
- not well advertised nor distributed within government structures;
- compromised by the limited value attached to the environment by both government officials and the general public.

And limited in or by its:

- Inadequate legal provisions and monitoring mechanisms for potentially hazardous projects and urban processes;
- unprofessional and unethical bias displayed by government officials and local councillors;
- minimal assurance that the spirit of the Environment Conservation Act would be clearly incorporated into provincial ordinances and local by-laws.

⁶⁶ Factors constraining the implementation of environmentally related legislation were raised by all participants.

⁶⁷ Although the longer term benefits might be quite obvious to these people, they are struggling to satisfy their basic needs.

Solution

The credibility of the Environment Conservation Act would be of immeasurable value to its successful implementation. In conjunction with the recommendations below (i.e. at local authority level), central government should make provision for, and ensure that:

- This legislation can be implemented;
- the Council for the Environment contextualize the Environment Conservation Act into the broader legal framework and make this available for publication;
- appropriately trained conscientious objectors be absorbed as environmental officers.

Local authorities should engage in environmental education programmes with all socio-economic groups and encompassing the broadest political spectrum, as well as within their own ranks. To gain public support for the implementation of environmental legislation, operational, monitoring and adjudication of transgressions should not have to resort to unnecessarily lengthy procedures. Permits issued under certain conditions should make provision for latent rehabilitation costs before being issued.⁶⁸

5.6.3 PROSECUTION⁶⁹

The lack of knowledge and experience of environmental legislation by government officials and officials of the Department of Justice (Advocates, State Prosecutors), often inhibits the prosecution process when it comes to the contentious and complex nature of environmental transgressions. This is also accompanied by the general inadequacy of maximum penalties for transgressions.

Solution

Prosecution of transgressions would be encouraged through the adoption of a more appropriate legal structure and framework and the stipulation of the process of implementation by central government.

⁶⁸ As well as the recommendations stated in 5.6.1

⁶⁹ The prosecution of transgressors of environmentally related legislation were raised by only 12% of the target group, with government officials feeling most constrained by this aspect of managing the urban environment.

The devolution of responsibility to all levels of government should make provision for relevant education programmes being made available to both government officials and other professionals on whom this responsibility now falls.

5.6.4 CONCLUSION

The solutions proposed above deal primarily with the potential of local authorities to satisfy the security needs (as defined by Maslow) of urban populations.

The successful implementation of these solutions is linked to the accommodation of all other levels of Maslow's hierarchy of human needs as the positive and inclusive approach underpinning these solutions should ensure sustainable development of urban environments and their constituent communities.

The conceptual base of environmentally related legislation in South Africa should take cognizance to develop environmentally appropriate and endorsed Planning Policies for local authorities. These issues are dealt with in the following section.

5.7 PLANNING: POLICY⁷⁰

5.7.1 CONCEPTUAL FRAMEWORK AND CORPORATE GOALS

There is no overall inter-related approved land use planning, resource planning and development approach for the country as a unit or as a series of units. Government structures do not operate within a conceptual framework or set of corporate goals.⁷¹ This minimizes the otherwise well intentioned, but unevaluated endeavours by government

⁷⁰ The lack of an appropriate and sanctioned framework in local authority intervention was raised by all participants a number of times in their interviews and hence actual percentages reflect 120% concurrence with the contents of this section.

⁷¹ This results in the lack of appropriate consideration of basic physiological needs in local communities.

departments and officials in their efforts to ensure the protection and controlled use of the urban environment.

Solution

For local authorities to be accountable for the protection, management and controlled use of the urban environment, an environmentally appropriate conceptual framework and set of corporate goals needs to be developed and approved. No additional legislation should be promulgated. Through a clear understanding of the ethics, underpinning values and positive implications of environmental conservation, local authorities would be able to fulfil the responsibility invested in them. This would include addressing sustainable development, and understanding the limitations of urban growth and past planning policies.

The inherent possibilities of urban land and infrastructural provisions, locational advantages, functional relationships and contextualized development should be exploited. An holistic approach to the resolution of urban environmental problems would be most likely to reveal the inherent complexities and inconsistencies in both current urban management and policy scenarios, as well as those regarding basic needs and social aspirations.⁷²

5.7.2 URBANIZATION

Planning structures seem to operate in isolation of present and anticipated trends and needs. The process of rural retrogression and depopulation exacerbates the process of urbanization.

Solution

Central government would mitigate some of the adverse effects of urbanization if it developed appropriate strategies (which were not racially based) in conjunction with the

⁷²

The environment does not belong to any group, department or person. The general public and Non-Government and Community Organizations need to be consulted in these matters.

responsible exploitation of economic opportunities in rural areas. This would promote the viability of rural areas thereby reducing depopulation and retrogression in those areas.

Local authorities, and specifically planning authorities, need to define the urban edge with due regard to demographic projections.

5.7.3 RESEARCH CREDIBILITY

In South Africa, research is largely funded by government and quasi-government bodies who are under no obligation to publish the results obtained. These projects are seen by Non-Government and Community Organizations as generally avoiding politically and environmentally sensitive issues and are therefore perceived as an unethical exploitation of taxpayers contributions. In addition, their perception was that researchers from traditionally white universities tend to approach their investigations with preconceived ideas about what the problems are and that they also tend to abuse the expectations of their target groups. Study areas are often inappropriately defined. These factors compromise the credibility and value of all research.

Solution

Despite the problems relating to research credibility mentioned above, environmental research based in South Africa is invaluable to the ability of local authorities to address the needs of its constituent populations and to the successful implementation of the spirit and directives of the Environment Conservation Act.

To promote authentic credibility, research proposals should be evaluated in terms of their need and desirability, and findings should be published, uncensored, and be accessible to the general public. The dynamic nature of the research process needs to be acknowledged by funders thus ensuring that findings are not adjusted to suit original expectations. In addition, these findings should inform management scenarios and environmental regulations.

Perhaps most importantly, funders of research and researchers themselves, need to abandon their specialist preconceptions in determining appropriate study areas and evaluation criteria for the multi-disciplinary nature of environmental concerns.

5.7.4 REHABILITATION OF RESOURCES

Legal requirements for the rehabilitation of resources, both natural and man-made (i.e. built), are contained in disjointed pieces of legislation and are limited in their application.

Solution

At all levels of government and non-government intervention regarding the environment, rehabilitation costs must be brought into the cost structure of feasibility studies. Integrated Environmental Management procedures indicate some ways of identifying mitigating solutions to the effects of urban growth and development. In this way they would be able to bring together and to compare economic, social and environmental costs. On-going research into refining these procedures would be most advantageous.

Local authorities should maximize local resources such as schools, youth and communities organizations in initiating the rehabilitation of natural environments and resources.

5.7.5 NATIONAL MONUMENTS COUNCIL

This valuable Council has inadequate rank in the legal hierarchy and in addition, does not receive sufficient financial resources with which to assert their role and responsibility.

Solution

The rank enjoyed by the National Monuments Act should be elevated in order to strengthen its legal force and lend it much needed credibility. In short, the provisions of this Act and its Council would be taken more seriously. The relationship between the National Monuments Council and central government needs to be defined and should not have to rely upon voluntary input by concerned officials.

5.7.6 CONCLUSION

Solutions to policy problems require both local and national intervention.

To ensure the security needs (as defined by Maslow) of both urban and rural populations, and to resolve urban environmental problems relating to policy issues, central government structures need to find equitable long-term solutions in order to stem the depopulation and abandonment of rural areas and in this way address the root cause of current urbanization trends. There should also be funding for research that would establish need and desirability criteria. There is also the need to ensure that statutory environmental bodies do indeed have the resources with which to accept the responsibility invested in them.

At the local level, the degree to which the proposed solutions in the preceding planning sections (which deal with financial, hierarchical and legal constraints and opportunities), are able to satisfy the security needs of urban populations and resolve urban environmental problems ultimately relies on the development and adoption of appropriate and responsibly sanctioned Planning Policies.

In general, policies relating to the functional integration of urban environmental systems, are underpinned by the prevailing political ideology of government.

The consequences of adhering to a Political ideology which paid scant regard to environmental issues are discussed in the following section. Proposed solutions in respect of the above are also discussed.

5.8 PLANNING: POLITICAL SYSTEMS⁷³

5.8.1 IDEOLOGY

The discrepancy between the South African Government's political ideology and the provisions of the proposed Environment Conservation Act⁷⁴ challenges the credibility of both the government and the legislature.^{75 76}

Solutions

Central government should renounce their political ideology of separate development. Thereafter, it should consult with all major political and social groups in order to amend, repeal and promulgate pertinent legislation so as to render it more equitable to the inhabitants of South Africa.

5.8.2 APARTHEID STRUCTURE

The Group Areas Act and the various Lands Act are generally regarded as the most environmentally destructive legislation enforced in South Africa. These are closely followed by the disfranchisement of the majority of the population.

⁷³ Individuals and representatives of Non-Government and Community Organizations were almost unanimous in their criticism of the South African Government's former political ideology of separate development and the varied impacts of its implementation on the environment. This perception was shared by at least 40% of government officials interviewed.

⁷⁴ Which seems to prioritize sustainable development and the equitable distribution and utilization of resources

⁷⁵ Irrespective of their personal political aspirations, many government officials interviewed, considered both the implementation of separate development and environmental conservation as contradictory to their professional ethics, which would preference their addressing the basic physiological needs for constituent communities.

⁷⁶ The economic, social and environmental costs of adherence to this ideology of separate development are dealt with in Section 5.4.1

Solution

Local authorities should exert pressure on the government to repeal the key legislation of the apartheid structure.⁷⁷

The co-operation of the population in the implementation of environmental policies and legislation is essential to effective and appropriate conservation of the environment in South Africa. Access to land and housing, security, economic opportunity and accountability would address human needs and would promote the creation of a more stable and responsible society.

5.8.3 CONCLUSION

The environmental costs that are associated with the implementation of the government's political ideology of separate development are enormous and cannot be adhered to in the existing context of minimal provision being made for the physiological and security needs, and indeed for all other levels identified in Maslow's hierarchy of human needs.

Responsible attempts to resolve urban environmental problems and to satisfy security needs (as defined by Maslow) of urban populations would require that all legislation directed at implementing the ideology of separate development be repealed. This would boost the credibility of local authorities who would hence be able to address the human needs of their constituent populations.

Major adjustments to present policies and procedures must certainly include provisions for the formulation of environmentally appropriate standards which can be sustained and which will enhance the environment in South Africa. In the following section an alternative to the regulatory and static nature of present Standards is discussed.

⁷⁷

See Footnote 48. Also 5.1 Introduction to Chapter 5.

5.9 PLANNING: STANDARDS AND QUALITY⁷⁸

5.9.1 RELEVANCE TO THE SOUTH AFRICAN CONTEXT

National Building Regulations and the standards contained therein have been formulated by, and apparently for, the affluent minority of the South African society. Inadequate or little cognizance seems to have been taken to enable or expedite the accommodation of basic physiological needs, as the standards set are unaffordable to the majority of South Africans. In addition, these regulations and standards do not acknowledge regionally specific and dynamic constraints and opportunities occurring in the diverse urban centres of South Africa.

Solution

In order to expedite the accommodation of basic physiological needs⁷⁹ and incorporate the diversity of needs, the formulation of National Building Regulations should give preference to performance criteria rather than to blanket standards, as a conceptual framework. These performance criteria⁸⁰ need to be environmentally responsible, regionally appropriate, attainable and affordable to all sectors of the population.

In the interim, local authorities should waive existing National Building Regulations and solicit the assistance of knowledgeable persons to develop environmentally responsible performance criteria which provide sustainable solutions to housing their disadvantaged communities.

⁷⁸ Between 60% and 80% of each of the 3 groups interviewed (Government officials: 73%; Non-Government and Community Organizations: 80%; Individuals: 60%) identified these problems as constraining the resolution of urban environmental problems

⁷⁹ The lack of which is cited as severely compromising the value of environmental conservation to the majority of the population.

⁸⁰ See chapter 1 section 1.4 for definition of this term.

5.9.2 ENVIRONMENTAL QUALITY

Adherence to the National Building Regulations has generated sterile and socially unredeeming environments.⁸¹ These regulations and standards have been so inculcated into the social perceptions of space that there are few demands to re-evaluate them.

Solution

Central government should recognize the limitations inherent in national legislation and regulations, and should formulate more suitable legislation and regulations.

Urban networks and facilities can provide valuable places of social interaction, communication and upliftment, and should not be managed as simply utilitarian arteries and nuclei.^{82 83}

At the local level, environmental education and community programmes would instill appropriate environmental values and evaluation competency in urban dwellers, who should be involved in developing acceptable solutions to environmental problems.

⁸¹ The disappearance of intimate and often elegant colonnades in urban streets, and their replacement with inappropriately generous set-backs is one example where the human scale and nature of "street" has been destroyed through the National Building Regulations.

⁸² The "street" can be a positive and human place; and not solely as a means of getting from one place to another as quickly as possible. Municipal clinics, libraries and even shopping precincts play a vital role in fostering sound environmental values and promoting social interaction in groups of people.

⁸³ It would seem relevant to note here that a group of people living in an identifiable area are not necessarily a community. South African urban dwellers and especially the newly urbanized, are often the result of the distasteful removals of the past few decades (enforcement of the Group Areas Act) or of unsuccessful rural economic policies (decentralization). The connections, values and inter-relationships between individuals need to be cultivated so that a real community can evolve. Although not specifically represented in the above, Scott Peck's book "THE DIFFERENT DRUM" (1987, Simon & Schuster, New York) further defines and develops the process of "making community" and should be consulted for work in this field.

5.9.3 COMPATIBILITY BETWEEN "DEVELOPMENT" AND ENVIRONMENTAL CONSERVATION

Environmental policies and guidelines are not generally incorporated into the standards set for urban development.⁸⁴ Urban environmental deterioration as a direct result of urban growth is manifested by increased air pollution and stormwater run-off, high noise levels, altered micro-climates, pressurized public open space and the isolation of indigenous vegetation communities.

Solution

Long-term environmentally appropriate goals need to be embraced by both local and central government bodies. Government officials should receive environmental education and gain proficiency in Integrated Environmental Management procedures both of which are essential for the effective performance of their tasks as government officials.

Mid-career environmental education courses should be made obligatory for Urban Planners and Engineers. These courses should address the resolution of profession-specific environmental problems which arise *inter alia* from the impacts of urban growth and renewal.

Some tangible solutions to the nature of problems highlighted in the problem-statement above are:

- To provide planted areas along roads and other hard surfaces which would encourage water retention and soil fertility;
- to specify that urban upgrading proposals proffer convenient affordable alternatives to residents;⁸⁵
- landscaping proposals that mitigate some effects of increasingly built-up areas, should be legally binding. These proposals should specify available budgets, plant species, maintenance and decommissioning programmes;

⁸⁴ Social disruption and disintegration of existing communities usually accompanies urban upgrading or "development".

⁸⁵ See also Housing Section 5.2.1. Footnote 8.

- to provide commercial centres and informal market places in residential areas;⁸⁶
- to involve local communities in municipal "Greening" and planting projects;
- to provide incentives to reduce increased pollution.

5.9.4 CONCLUSION

The inherently inclusive and consultative nature of performance criteria, as opposed to the present "top-down" National Building Regulations and static standards employed by local authorities, bear direct relation to the accommodation of security needs (as defined by Maslow) of urban populations. In addition, as this approach is essentially reliant upon the adequate awareness and understanding of environmental systems, resources and problems by local authorities, related professionals, and urban populations, its successful implementation would promote the accommodation of other needs as identified in Maslow's hierarchy of human needs.

The final section that directly addresses the accommodation of security needs and the resolution of urban environmental problems which has a bearing on planning issues, deals with the development and implementation of Zoning policies and follows hereafter.

5.10 PLANNING: ZONING⁸⁷

5.10.1 ZONING POLICIES

Zoning schemes and land-use planning legislation are unable to accommodate the dynamic nature of urban growth. Some examples of this are:

⁸⁶ These facilities would promote small to medium businesses and economic mobility, reduce the pressure on existing social infrastructure, reduce transportation costs to the lower income sectors of the population, stimulate home industry outlets. Perhaps most important, these facilities would humanize and contextualize existing dormitory towns.

⁸⁷ 15% of government officials and Non-government and Community Organizations discussed the impacts of these policies and processes on the environment. Individuals did not refer to them at all.

- The limitations of changing use of historical buildings and precincts;
- the location and capacity of urban infrastructural provisions such as schools, hospitals, waste disposal sites, transportation networks, infrastructural services, industrial and commercial districts;
- separatist approach to locating urban activities;
- master planning.

Solutions

Central government should endorse the devolution of authority legislated in the Environment Conservation Act by empowering local authorities to amend zoning schemes and land-use planning legislation.

Local authorities should prioritize forward planning and should exploit Integrated Environmental Management procedures so as to harmonize physical and social considerations with other urban provisions.

Valuable insight can be gained from areas where non-compliance with existing regulations have been controlled by neighbourhood considerations, (with specific reference to areas where informal sector trading and home industry activities have been successful). However, it was cautioned that some circumspection in this regard should be entertained as social acceptability is not an absolute measure of propriety.

5.10.2 CONCLUSION

This is the final section that falls under the broad umbrella of planning related issues. Zoning policies affect the nature and direction of urban growth and development thereby setting the tone and distribution of urban facilities and resources.

The successful implementation of these proposed solutions will promote the accommodation of security needs (as defined by Maslow) of urban populations and attempt to resolve urban environmental problems as these solutions propose a more

dynamic and immediate response to zoning policies and problems, than the hierarchical and bureaucratic legal procedures presently employed.

However, the eventual accommodation of security needs and the resolution of all urban environmental problems relies on public endorsement of, and support for, planning proposals and procedures. The next section deals with the constraints on and opportunities for Public Participation.

5.11 PUBLIC PARTICIPATION⁸⁸

5.11.1 POLITICAL IDEOLOGY

The majority of the population have no legal standing in existing political processes. This precludes their right to question the implementation of environmentally destructive legislation⁸⁹ and therefore compromises their willingness to co-operate with any future initiatives to correct this imbalance. Peaceful representation by disfranchised communities is ignored until they resort to confrontational means.⁹⁰ Adherence to current⁹¹ regulations and requirements therefore seems to be irrelevant and of no benefit to their circumstances.

⁸⁸ By far the majority of Non-Government and Community Organizations and individuals (85%) raised these issues and the constraints thereby imposed on the resolution of urban environmental problems. However, only 25% of government officials interviewed considered that the lack of public participation in fact constrained the resolution of urban environmental problems.

⁸⁹ This calls into question one of the fundamental policy directives of the Environment Conservation Bill published for public scrutiny and comment in October, 1987 which stated that "d) the establishment, maintenance and improvement of living environments which contribute to a generally acceptable quality of life for the inhabitants of the Republic of South Africa".

⁹⁰ This includes representation to local authorities regarding the disposal of waste and provision of basic services. A number of cases were mentioned where such actions were perceived by government authorities as politically motivated and responsible representatives were threatened with arrest.

⁹¹ At the time of collecting the primary data for this research.

Solution

As manifestation of the government's commitment to the basic tenets of environmental conservation, which focuses on the interaction between "Man"⁹² and his environment, national legislation that excludes the majority of the population from political processes should be repealed.

5.11.2 QUALITY

The South African population generally displays an indifference to matters affecting the environment. This indifference seems to be based on either the limited ability of the general public to meaningfully affect planning policies and legislation, or the inappropriate nature of said policies and legislation. Across the socio-economic and political spectrum, legislation is viewed as being developed in isolation of the needs and aspirations of the population. This, by implication, applies to environmental legislation as well.

Solution

Government authorities dealing with the implementation of the Environment Conservation Act should encourage public participation by implementing active environmental education programmes, elucidating the public regarding their rights and responsibilities and by consulting a broad cross-section of the population, professional institutes and local authorities. This would ensure that environmental policies are appropriate to the needs of the population, balanced and practical as well as environmentally responsible.

Local populations and affected parties need to be drawn into the decision-making process regarding either their approval of new projects and upgrading proposals or the drafting of new locally applicable environmental legislation. Attitude surveys, house-meetings, socio-economic profiles and an awareness of the degree to which basic needs are satisfied in local populations have been found to provide invaluable insights for government authorities. These mechanisms would ensure better understanding by local authorities of

⁹²

The word "Man" is used in its generic sense and includes government officials, interest groups and individuals.

the needs, desires and conditions at both "grassroots" level and at the "coal-face" of their occurrence.

5.11.3 PROFESSIONAL BEHAVIOUR

Non-Government and Community Organizations including public pressure groups and civic action committees are accused by Developers and government authorities of unnecessarily delaying the planning process.

Solution

Government officials and Developers need to appreciate that the procedures of Integrated Environmental Management do not only highlight the potential environmental problems associated with their proposals, but can also reinforce the relevance and advantages of said proposals. These procedures prevent ill-informed decisions being taken that could be environmentally costly to present and future generations. Delays encountered by inviting comment from both the general and informed public, evaluating the environmental implications and arriving at balanced and environmentally appropriate resolutions are in fact time well invested and do not constitute unnecessary delays.

Non-Government and Community Organizations and informed members of the public should exercise their ethical responsibility to ensure that these procedures are expedited in an environmentally appropriate manner.

Researchers dealing with environmentally related research have a responsibility to ensure the timely publication of their research findings and to communicate these to both the public and private sectors. Furthermore, the legislature should extend the basis for *locus standi* to enable the informed public to bring court actions against the implementors of potentially environmentally destructive or hazardous actions.

5.11.4 CONCLUSION

By facilitating meaningful participation as advocated above, local authorities would be exposed to the broad ranging needs and aspirations of their constituent communities.

They would also invest these communities with a measure of responsibility toward the accommodation of their needs and the resolution of urban environmental problems, thereby directly contributing to the accommodation of ego needs (as defined by Maslow) in these communities.

Although participatory processes are more difficult and time-consuming than a "top-down" and exclusive approach, these processes are more likely to achieve acceptable and sustainable solutions and reduce long-term costs to the environment.

The implication of implementing these procedures and solutions therefore clearly addresses the accommodation of ego needs (as defined by Maslow) in urban communities and the resolution of urban environmental problems that would benefit from public participation.

The linkages described in the preceding chapter between urban environmental problems and Maslow's hierarchy of human needs, indicated that the adequate provision of social services, (identified as Health, Education and Recreation), would address the accommodation of physiological, social and self-realization needs respectively. These three topics are addressed hereafter.

5.12 HEALTH PROVISIONS⁹³

5.12.1 STANDARDS IN THE WORK PLACE

Health standards are generally inherited from developed countries and are not adapted to the South African context, resulting in widespread non-compliance with these standards. Examples of this non-compliance are generally attributed to:

⁹³

Less than 30% of each group perceived these problems as major constraints to the resolution of urban environmental problems, even though this category addressed the satisfaction of basic physiological needs.

- It being easier and cheaper for management to provide protective clothing for workers dealing with toxic materials and emissions, rather than reducing the health risk to both workers and the surrounding area by adjusting their production process.
- the discrepancy between standards set for the work place and standards manifest in residential areas of the labour force;
- the time required to run quality tests on perishable consumer items and the shelf life of such items.

Solution

It is essential to set standards that are appropriate to the natural, physical, social and built environments in South Africa. This, in itself, would not guarantee compliance, but would greatly enhance the practical implementation of health legislation and thereby increase the credibility of local authority health departments.

A reduction in toxic emissions is preferable to the provision of protective clothing and incentives for the installation of anti-pollutant mechanisms should be drafted into the appropriate legislation.

Housing solutions have been dealt with in Section 5.2 of this chapter.

5.12.2 HEALTH SERVICES AND RESOURCES

Adherence to current political and economic policies results in multiple provision of services. This represents an irresponsible and inappropriate utilization of limited financial and professional resources, with local authorities responsible for peri-urban and outlying populations being reliant upon larger metropolitan authorities for assistance.

Solution

Central government should realize that to ensure the appropriate utilization of resources, public health services and facilities need to be de-segregated. De-segregation of these services would relieve the pressure on these limited resources.

5.12.3 LOCATION AND CATEGORY OF HEALTH SERVICES

The location and category of public health services do not seem to be taken into consideration by the relevant authorities. Nor do these authorities consult the public regarding the discontinuation of health services in certain areas. Outlying and peri-urban populations have to travel great distances for specialist care and do so at their own cost.

Solution

Land-use planning provisions need to ensure maximum accessibility to public health services. An integrated or holistic approach to the provision of health and other services is suggested so as to ensure the most appropriate and responsible utilization of resources. Discontinuation of, or alteration to, health service provisions should be sanctioned by affected communities.

A circuit medical specialist would be a possible solution to the last aspect of the problem statement. This could be achieved by establishing outlying clinics, comprising a range of specialists present on different days. The financial and other costs⁹⁴ of commuting would be better spent by individual specialists who could include these cost proportionately into patient billings.

5.12.4 CONCLUSION

The proposed solutions would reduce public as well as private exposure to toxic materials and waste, thereby mitigating their long-term impacts on the urban environment and its constituent population.

Furthermore, the de-segregation and re-evaluation of the nature, type and location of regional, urban and local facilities would reduce public and private expenditure and result in appropriate health services being available to a greater number of people.

⁹⁴

Time off work and possible overnight accommodation, transportation of the sick, no familiarity with surroundings and other resources are some of the stress inducing factors to patients needing specialist care in distant urban areas.

Although these solutions address the provision of social services by local authorities, they deal directly with the accommodation of basic physiological needs and thereby attempting to resolve urban environmental problems associated with health issues in the urban environment.

The next section deals with the resolution of Education-related problems in the urban context.

5.13 EDUCATION⁹⁵

5.13.1 GENERAL

Both government officials and the general public have limited understanding and awareness of, and access to, environmental legislation, systems, values and mechanisms. Communication and distribution of environmentally related legislation and the underpinning ideological frameworks, regulations and guidelines to the public are poor as no active environmental programmes for public engagement are undertaken by government structures. Although the implementation of Integrated Environmental Management procedures are likely to mitigate the anticipated impacts of urban development on the environment, skills in this field are not stipulated qualifications for government officials.

Solution

Guidelines from central government regarding manifestations of environmental deterioration, the public's right, legal considerations and realistic expectations require other legislation, relevant to environmental conservation, to be made available to the public. Thus informed, the general public would be of great assistance to government officials at all levels of environmental intervention. Central government should invest sufficient funds in environmental education at all levels of its responsibility.

⁹⁵

Almost 60% of each group interviewed viewed these problems as critical to the resolution of urban environmental problems and the satisfaction of human needs.

Greater communication and co-operation between central and local government regarding content, finance, process and relevancy of environmental education projects would enhance the success of these projects. Financial assistance from central government for mid-career environmental education programmes for government officials who deal specifically with the implementation of the Environment Conservation Act, would be well received and appreciated.

Environmental education by local authorities needs to cultivate primarily an understanding for the need and desirability of environmental conservation in their constituent populations. This understanding is vital to the co-operation of local populations and the ultimate success of the implementation of the Environment Conservation Act. Locally appropriate guidelines, dealing specifically with the prevention of environmental deterioration, need to be developed at the local level and distributed to the local population.

5.13.2 FORMAL

Environmental education in primary and tertiary education receives little attention and relies predominantly on private institutions and Non-government and Community Organizations to inculcate environmentally sound values in future generations. These institutions and organizations operate in isolation of each other and are not accessible to all sectors of the South African population.

Solution

Environmental education should be incorporated into all levels of formal education.⁹⁶ Theoretical, philosophical and practical knowledge should form part of these syllabuses. "Teachers" should include not only people trained in education but also practitioners in environmentally related fields.⁹⁷

⁹⁶ Primary and Tertiary education as well as environmentally related professions such as Architects, Town Planners, Engineers, Economists, Teachers and Agriculturalists.

⁹⁷ These could include industrialists, economists, farmers, conservation officers, business people, sociologists and social workers.

5.13.3 RESEARCH

Environmental research level bears little relation to the tenets of sustainable development as well as the accommodation of basic needs and quality of life for the whole population. Research findings are therefore generally limited in their practical application.

Solution

The allocation of government funds for environmentally related research should give priority to investigations that intend to deal with environmental issues related to the accommodation of basic needs. This would promote and hopefully guarantee the credibility of, and support for, university based research in South Africa.

5.13.4 CONCLUSION

The solutions proposed above would not only ensure that all urban communities receive formal environmental education, but that sound environmental values and evaluation skills would be inculcated in, and imparted to, present and future generations, professionals and policy makers.

Therefore, although these solutions are primarily linked to the accommodation of social needs (as defined by Maslow) and upliftment, they are further linked to the accommodation of security and ego needs by facilitating accountability and involvement through informed public participation. The implications of implementing these proposals would clearly address the resolution of urban environmental problems related to educational provisions as well as augmenting local authority attempts to resolve broader urban environmental problems.

The last aspect dealt with under social services and the final section of this chapter, deals with the Recreational resources in urban environments.

5.14 RECREATION⁹⁸

5.14.1 AVAILABLE LAND

The setting aside of land for Public Open Space and for recreational facilities often occurs more by default than by the application of positive management policies. Public Open Space, for either active or passive recreational pursuits, is under enormous pressure for re-zoning as residential land and could result in the permanent loss of these resources. This is especially prevalent in areas of high densities and limited economic mobility.

Solution

Public Open Space is essential to the social well-being of all South Africans and promotes the quality of life in urban environments. Land set aside for Public Open Space and recreational activities should positively reinforce the underpinning foundations of need and desirability, and should not rely on left over land that is either difficult to build on, hazardous to users, or left over corners.

These underpinning foundations need to be recognized by both government officials and the general public⁹⁹ in order to moderate the negative perception that Public Open Space is purely wasted land that needs to be maintained. This recognition would encourage and ensure the approval and support of government officials and local communities for the establishment of recreational facilities.

⁹⁸ Government officials were most conscious of the financial constraints regarding the management and control of recreational resources (100% of the comment in this regard). In addition, the critical need for recreational opportunities was shared by all participants even though these provisions address the satisfaction of self-realization needs in urban populations (60% of government officials; 45% of both Non-Government and Community Organizations and Individuals). This supports the need to accommodate all levels of human needs in attempts to satisfy more immediate needs, such as basic physiological needs, and resolve urban environmental problems.

⁹⁹ See 5.13 Education.

Feasibility studies and the proclamation of new townships should include the provision of adequate and diverse Public Open Space facilities. These provisions should be a condition of approval by the relevant government authorities and should be upheld for future generations in perpetuity.

5.14.2 ALLOCATION OF FUNDS

The allocation of funds for the establishment, construction and maintenance of Public Open Space seems incongruous in the context of limited accommodation of basic needs. Conversely, the more affluent sectors of the South African population view the allocation of funds for the maintenance and control of Public Open Space as inadequate. This contradiction frustrates an environmentally appropriate and sustainable resolution to these problems.

Solution

Environmental education of both government officials and the general public should be followed by the application of Integrated Environmental Management procedures to rate and rank the benefits of Public Open Space and recreational facilities. This process should assist with the development of an informed set of solutions to this perceived contradiction.

5.14.3 STANDARDS

Based on the negative perceptions held by both government officials and the general public regarding Public Open Space facilities mentioned above, re-zoning applications for Public Open Space and recreational facilities are generally approved by the authorities.

Solution

Standards and ratios of densities and numbers to Public Open Space and recreational facilities should be set out in either national legislation or regulations. Where appropriate, Non-Government and Community Organizations should be invited to share

responsibility for the maintenance of these facilities,¹⁰⁰ however, general access should not be precluded from these areas.

5.14.4 CONCLUSION

The nature of problems raised in this section demonstrates the link between recreation and self-realization, as recreational resources and facilities are often perceived as unnecessary burdens on attempts to satisfy basic physiological and security needs. However, a responsible approach to the resolution of urban environmental problems must be holistic and as such would require that attempts to resolve basic problems anticipate the need for the eventual accommodation of all levels of Maslow's hierarchy of human needs.

The importance of ensuring the adequate provision and protection of recreational resources and facilities is validated by the fact that it is enormously expensive and often impossible to re-establish or rehabilitate Public Open Space and nature areas lost when there is a singular and excessive approach to the accommodation of only the basic levels of human needs.

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Rates and rentals could be partially or wholly substituted should certain groups assume responsibility for the maintenance of public open space and recreational facilities.

CHAPTER 6

EVALUATION OF THE FINDINGS

6.1 INTRODUCTION

In this chapter, a summary of the most widespread perceptions¹⁰¹ of the target group are considered against both Maslow's hierarchy of human needs and the foundations for the determination of a national environmental policy as contained in the Environment Conservation Act.¹⁰²

The degree to which these perceptions concur with the foundations of environmental policy should not only provide an indication of the ability for this research to meet its primary objective, but should further serve as a measure of the appropriateness of these foundations as the basis for a national environmental policy that would be applicable to urban environmental problems in South Africa.

6.2 SUMMARY OF THE FINDINGS

The most widespread perceptions of the target group regarding factors constraining the resolution of urban environmental problems that emerged during the interviews were that:

Firstly, the limited degree to which basic Physiological needs have been met in South Africa directly constrains the resolution of urban environmental problems. People who are struggling to subsist and have little or no security give no priority to environmental issues that do not seem to be of any direct benefit to them.

¹⁰¹ All problems raised in the preceding chapter are not represented herein. This evaluation would otherwise constitute a repetition of the findings presented there.

¹⁰² Included in the scope of the project and accepted as criteria for evaluation in Chapter 1 Section 1.2.2.

Secondly, the political ideology of separate development, which has excluded the majority of the population from the right to own land and housing and from access to legal representation, is completely at variance with Maslow's higher order needs of Social acceptance and Ego involvement. This has led to significant sections of the South African population feeling no sense of involvement in environmental conservation (which relates to Social, Ego and Self-realization needs once basic needs have been met).

Thirdly, the specialist and reductionist nature and approach to the implementation of present urban planning policies is in direct conflict with the underpinning environmental philosophy of holism. South African Government structures also operate in isolation from each other and without a sanctioned conceptual framework. This has led to almost absolute exclusion of public participation and consultation from planning processes. This clearly distances local authorities from the communities they are supposed to serve. This results in the human need for Ego involvement not being met and consequently policies are rejected.

Fourthly, functional and legal hierarchies dealing with environmental issues are unclear. Again, the human need for Ego involvement has been ignored and consequently entire groups have found it difficult to become involved in projects and schemes aimed at environmental improvement.

Fifthly, South African legislation in general, including environmental legislation, is viewed as being restrictive rather than enabling, and designed to prevent Self-realization in the black community. Attainment of the human need at the top of Maslow's hierarchy is thus also constrained because of the South African legacy of apartheid.

There appears therefore to be no accord between attempts to resolve South African urban environmental problems and appreciation of the hierarchy of needs that must also be met. Many environmental initiatives will, it is suggested, continue to flounder until such time as attainment of environmental objectives are seen as being an integral part of political and social development.

6.3 FOUNDATIONS FOR DETERMINATION OF ENVIRONMENTAL POLICY

The full title of the Environment Conservation Act is

To provide for the effective protection and controlled utilization of the environment and for matters incidental thereto.

To ensure the successful implementation of this Act, the following foundations (Part 1: Policy for Environmental Conservation, Determination of Policy) are set out for the development of detailed environmental policy statements.¹⁰³

- (a) the protection of ecological processes, natural systems and the natural beauty as well as the preservation of biotic diversity in the natural environment;
- (b) the promotion of sustained utilization of species and ecosystems and the effective application and re-use of natural resources;
- (c) the protection of the environment against disturbance, deterioration, defacement, poisoning or destruction as a result of man-made structures, installations, processes or products or human activities;
- (d) the establishment, maintenance and improvement of environments which contribute to a generally acceptable quality of life for the inhabitants of the Republic of South Africa.

These statements will now be compared with the perceptions of the target group surveyed in this study.

6.4 EVALUATION

6.4.1 HOUSING

The resolution of urban environmental problems relating to the provision of housing and thus promoting the accommodation of basic Physiological needs, depends on local authorities structures being able to:

- De-constrain under-utilized land set aside for particular racial groups;
- control development on environmentally sensitive land;

¹⁰³

To date no detailed environmental policy statements have been issued.

- co-ordinate and re-allocate financial resources;
- provide ownership opportunities;
- develop and implement affordable and environmentally sustainable performance criteria for housing construction and zoning policies.

When compared to the provisions contained in the Environment Conservation Act, these solutions almost wholly concur with the last provision (which addresses the establishment, maintenance and improvement of the environment and thereby contributes to an improved quality of life for urban populations). To a lesser extent, these solutions protect the environment against man's activities and structures.

The other provisions for determination of policy statements, which deal predominantly with the protection of natural ecosystems, species and the sustained utilization of natural resources, are largely ignored as these provisions were not perceived by the participants to be relevant to the resolution of housing problems in the urban environment and the accommodation of basic Physiological needs.

6.4.2 WASTE

Waste related problems in urban areas are attributed to:

- The location of waste disposal sites as constrained by the direction of urban growth, post-operational usage and social perceptions;
- the inability of local authorities structures to resolve inherent conflicts regarding the hierarchy, jurisdiction and implementation of waste legislation, with the latter being further constrained by present funding frameworks, the lack of regional co-ordination and the absence of an equitable base for "top-down" standards (social and health costs are not considered);
- the conflicting utilization of water resources wherein the perceived hierarchy of need is not sanctioned by the urban population.

The resolution of these problems, linked to the accommodation of Physiological needs, is reliant upon adequate and holistic forward planning, regional co-ordination of resources and needs, and broadly based environmental education for both government authorities and the general public.

Besides the utilization of water resources, the diverse impacts of waste mis-management (which deal with disturbance, deterioration, defacement, poisoning or destruction of the environment) on natural systems, ecological processes and biotic diversity were generally perceived by the participants as being peripheral to the accommodation of basic Physiological needs and the promotion of the quality of life of urban populations.

Although these perceptions are largely inconsistent with the dominant provisions of the Environment Conservation Act, they do concur with the last provision namely the establishment, maintenance, and improvement of the quality of life in South Africa.

6.4.3 PLANNING

Local authorities are entrusted with the responsibility to provide for the protection and controlled utilization of the environment, so as to ensure the Security needs and promote the quality of life of their constituent populations.

However, existing financial, hierarchical and legal frameworks are based on the South African Government's political ideology of separate development.¹⁰⁴ The implementation of this ideology severely limits the ability of local authorities to develop and implement affordable, sanctioned, environmentally appropriate and sustainable planning and zoning policies and performance standards.

In order to ensure the Security of urban populations, legislation based on this ideology must be repealed. This would display the South African Government's commitment to the successful implementation of the Environment Conservation Act, enable better representation of the needs and aspirations of urban communities and thereby promote the credibility of local authority structures and their attempts to improve the quality of life in South African urban areas.

When evaluated against the provisions of the Environment Conservation Act, these findings reveal the secondary nature of the Act's concern for the urban environment and

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its preoccupation with matters affecting natural environmental systems. The perceptions of the participants nevertheless accord with the last provision of the policy, viz: the establishment, maintenance and improvement of environments which contribute to a generally acceptable quality of life.

6.4.4 PUBLIC PARTICIPATION

The primary objective of the Environment Conservation Act is to anticipate and provide for the sustainable interaction between "Man"¹⁰⁵ and his environment. The present "top-down" and exclusive nature of government intervention is in conflict with this objective as communities have been alienated by imposed solutions.

By enabling and endorsing inclusive public participation, local authority structures would be informed of the needs and aspirations of their constituent communities. These communities, thus included, would be able to accommodate Ego needs and thereby contribute to the establishment, maintenance and improvement of their environment and the quality of their lives; this accords with the last provision in the Environment Conservation Act for determination of policy statements.

6.4.5 SOCIAL SERVICES: HEALTH, EDUCATION AND RECREATION.

The provision of social services such as health, education and recreation are linked to the accommodation of Physiological, Social and Self-realization needs of urban populations respectively.

In all three aspects, the adequate provision of facilities was constrained by the implementation of the South African Government's political ideology of separate development. By de-segregating these structures, the government could release much-needed funding. This would enable local authorities to resolve the urban environmental problems relating to the provision of social services by:

¹⁰⁵ As previously, Man is used in its generic sense and not as representation of the male species.

- Improving working and living conditions related to the accommodation of basic Physiological needs;
- implementing both formal and informal environmental education and research, promoting better understanding and responsibility in urban populations as regards the accommodation of Social needs, and ;
- ensuring that adequate and accessible Public Open Space and recreational opportunities are established and maintained, and are related to the accommodation of Self-realization needs in urban communities.

These solutions which anticipate the accommodation of a broad range of human needs, therefore clearly accord with the provision in the Environment Conservation Act to establish, maintain and improve the environment and thereby contribute to the quality of life for urban populations.

Although not the primary intention of the proposed solutions, the reduction of toxic emissions, the promotion of sound environmental values in urban populations and policy makers, and the protection and controlled utilization of natural areas for Public Open Space and other recreational opportunities do concur with some aspects of the remaining provisions concerning the determination of policy statements as contained in the Environment Conservation Act.

6.4.6 CONCLUSION

In conclusion, the most widespread perceptions of participants regarding the resolution of urban environmental problems and which are linked to the eventual accommodation of all levels of human need, concur with the last provision for determination of policy statements, namely the establishment, maintenance and improvement of environments which contribute to a generally acceptable quality of life for urban populations.

However, only limited reference is made to the other provisions for determination of policy statements regarding the natural environment, its systems and resources, and which are quoted in Section 6.3 preceding.

From this it should be clear that until government authorities begin to address issues relating to the accommodation of human needs and the promotion of quality of life for

urban populations, there is little point in utilizing scarce resources for the determination and implementation of policies to ensure the effective protection and controlled utilization of the natural environment in isolation of the accommodation of all levels of human needs as identified by Maslow.

6.5 CONCLUDING DISCUSSION

6.5.1 INTRODUCTION

Fundamental to the successful implementation of the Environment Conservation Act, is "the establishment, maintenance and improvement of environments which contribute to a generally acceptable quality of life for the inhabitants of the Republic of South Africa."¹⁰⁶ The following recommendations are based on the proposed solutions to the most widely held perceptions of the study group and form the basis for the formulation of appropriate and practical environmental policies for implementation by local authorities throughout South Africa.

6.5.2 ACCOMMODATION OF NEEDS

The accommodation of a hierarchy of needs for all South Africans is seen as the most essential prerequisite for the successful implementation of environmental conservation in South Africa. Without attempts being made to satisfy these needs, it is not feasible to expect either the disadvantaged communities themselves or the rest of the general public to accept the integrity of the government and support the implementation of the Environment Conservation Act.

¹⁰⁶ Environmental Conservation Act No. 73 of 1989, Part 1 Determination of Policy 2.(1)(d).

6.5.3 LEGISLATION

The political ideologies, principles and policies underpinning or contained in all national legislation should be in harmony with one another. To achieve this, environmentally destructive national legislation and in particular the Group Areas Act, the various Land Acts, Separate Amenities Act and the Population Registration Act,¹⁰⁷ should be repealed. People should have equal status and access to legal mechanisms and the opportunity to live in harmony with each other and the environment. This is in accord with both Maslow's hierarchy and widely accepted statements on human rights.

6.5.4 INTEGRATED ENVIRONMENTAL MANAGEMENT

The policy and procedures of Integrated Environmental Management (Council for the Environment, 1989) should be legally enforceable. Integral to this approach is the rational and informed participation of the public. This participation is therefore reliant on the active commitment on the part of government authorities to environmental education and the dissemination of relevant legislation and information to the general public as well as to all government officials dealing with the implementation of environmentally related legislation.

6.5.5 APPROPRIATE AND SUSTAINABLE STANDARDS

Government authorities need to accept the dynamic quality of urban growth and environmental problems. Planning policies, mechanisms and standards should respond to this quality by developing environmentally appropriate and sustainable performance criteria for urban activities. Such standards must be acceptable to the urban population.

¹⁰⁷

Although this legislation has since been repealed, the implications of their enforcement over the past four decades have left government authorities with the task of improving the quality of life of all South African and restoring their credibility in the eyes of the South African and international communities.

6.5.6 POLITICAL BOUNDARIES

Political boundaries should respect functional and natural systems which should be used to inform the definition of administrative units. Peri-urban populations, who form an integral part of the urban economy, need to be legally incorporated into the functional region of an urban area. The impacts of urban activities on natural systems extend way beyond existing political boundaries and as such need to be incorporated into the functional region of local authority jurisdiction.¹⁰⁸

6.5.7 BUREAUCRATIC HIERARCHIES

Administrative and legal hierarchies need to be clarified and respected.¹⁰⁹ Local authority structures and their constituent populations need to be reassured that informed decisions¹¹⁰ taken at the "coal-face" will not be over-ruled by higher levels of authority without their consultation.

¹⁰⁸ Agricultural, residential and industrial activities in catchment areas and on adjacent land directly affect the viability and sustainability of catchment areas, river courses and estuaries and as such need to be incorporated into relevant urban administrative units.

¹⁰⁹ Throughout, participants did not know where to go, who to ask, what their legal rights were and what legislation could be invoked without, at the end of the day, being overruled without any legal basis.

¹¹⁰ Informed decisions would be reached by adequate and sanctioned public participation procedures.

CHAPTER 7

CONCLUSION

7.1 INTRODUCTION

Most urban areas in the developing world are facing problems such as homelessness, overcrowding, inappropriate infrastructural networks and the general deterioration of their physical, natural, social and built environmental qualities. This report presents the findings of an investigation into the factors constraining the resolution of urban environmental problems in South Africa.

7.2 UNEXPECTED NATURE OF RESPONSES AND ANALYSIS OF THE FINDINGS

7.2.1 PROBLEMS IDENTIFIED BY PARTICIPANTS

Preliminary discussions with parties interested in this project (local authority officials in the Cape Town, Johannesburg and Durban metropolitan regions, the Human Sciences Research Council who funded this research and representatives of the Council for the Environment) indicated that they anticipated that participants in this project would identify specific legislative problems directly linked to environmental problems such as air and water pollution or waste disposal.

This research showed this perception to be wrong. Quantifiable environmental problems such as noise, water and air pollution, protection of natural resources and vegetation communities were almost totally ignored by all the participants interviewed regarding the nature of South African urban environmental problems confronting local authorities. Instead, the underpinning ideologies, planning policies, mechanisms of implementation and bureaucratic hierarchies that affect the nature of South African urban growth and development were overwhelmingly identified as being the main causes of urban environmental problems.

An analysis of the responses revealed that 60% of the problems identified by participants dealt with urban planning. More than half of these problems referred to ill-defined or inappropriate assumptions, bureaucratic hierarchies, or the ineffectual implementation of environmentally related legislation, policies and procedures. Government officials operating at the local level were found to be generally frustrated because their expertise is inadequately used and their authority is often over-ruled by higher levels of government.

7.2.2 PROBLEM RESOLUTION IN METROPOLITAN REGIONS AND OUTLYING AREAS

Another partially erroneous initial perception (that, in fact, led to this research being undertaken) was that smaller isolated local authorities would have limited skills, manpower and financial resources with which to exercise the responsibility and authority invested in them by the Environment Conservation Act.

The research process revealed that despite limited manpower, local authorities operating in outlying areas have more often tended to adopt a more holistic approach to the resolution of local urban environmental problems than local authorities in metropolitan areas. Although perhaps not sanctioned by recognized legal procedures, communication, consultation and co-operation between the various local authorities and Homeland administrations and local communities occur more readily in small urban places than in metropolitan centres in South Africa.

Officials in small towns operating at the "coal face" of urban environmental activities, are in direct contact with the issues, and generally need to be directly involved with all other government or homeland officials as well as community leaders and transgressors. Local authorities in some outlying urban areas have initiated valuable research and development work through a strong social commitment to their own constituents and the problems that they face. These include:

- Research and documentation of historical buildings, social surveys of all users of the local authority area - not only registered residents and rate payers;

- the development of small businesses at "industrial hives" and disused historical buildings such as railway stations and warehouses;
- responsive engagements with regional representatives of the National Monuments Council, Architects and other professional institutes;
- the exploitation of their locational advantage for the resolution of service supply between South Africa and the homeland States as well as non-legislated regional service solutions to financial and capital constraints.

7.2.3 LEGISLATION AS A MEANS OF RESOLVING URBAN ENVIRONMENTAL PROBLEMS

At the outset of this research, it was anticipated that participants would identify and request more legislation and regulations to enable them to fulfil their roles and responsibilities as set out in the Environment Conservation Act. This assumption was wrong.

Almost every participant interviewed believed that the value placed on legislation as a means to resolve urban environmental problems was inappropriate. Few officials were familiar with the full range and content of legislation and furthermore, it is already impossible for them to implement existing legislative provisions. Most officials requested clarification of the underpinning principles of environmental conservation as well as clarification of the structure and responsibilities of the existing bureaucracy dealing with environmental issues.

7.2.4 CONCLUSION AS TO APPROPRIATENESS OF RESEARCH METHOD

The unexpected nature of the findings discussed above vindicate the decision to adopt a flexible and broad ranging approach to the research process¹¹¹ as well as to the classification of the findings.¹¹² As can be appreciated from 7.2.3 above, awareness and understanding of environmental issues and related legislation was limited in the target group. Therefore, in retrospect, had a mailed questionnaire been used, without interviews

¹¹¹ Chapter 1, Section 1.2. Chapter 2, Section 2.2, 2.3 & 2.4

¹¹² Chapter 2, Section 2.5.

being undertaken with the participants, the nature of their inputs could have been distorted.

7.3 METHODOLOGICAL ISSUES

7.3.1 USEFULNESS OF PROCEDURE TO OTHER RESEARCHERS IN ENVIRONMENTALLY RELATED FIELDS

The interactive process used for defining, identifying and establishing urban environmental activities and target groups was critical to this research. Although expensive and time consuming, this process provided a valuable experience of networking where target groups were difficult to identify. An evaluation of this process (not included in this research), would be most valuable to other researchers in environmentally related fields as many preconceived notions about issues and responsible parties appear to exist.

7.3.2 TARGET GROUP AWARENESS

The process of the research appeared to stimulate the awareness of local authority officials, Non-Government and Community Organizations concerning environmental legislation. This in turn raised many problem areas not initially anticipated, but which were regarded as environmentally significant by participants. Incorporation of these issues when seeking solutions to urban environmental problems is clearly essential.

7.3.3 LIMITATIONS OF THIS RESEARCH

This project was limited by the State of Emergency in force in South Africa at the time of collecting the primary data. The limited financial resources and the need for timeous completion of the fieldwork did result in compromises having to be made. However, every effort was made to ensure that a representative sample of the target group was surveyed through rescheduling interviews and providing absolute guarantees of confidentiality.

7.4 CONCLUSION

As mentioned in the first chapter, the objective of this research was:

"to provide a base document to guide local authorities toward appropriate and practicable resolution of urban environmental problems held to be important by those actually involved in local authority affairs in South Africa."¹¹³

The most widespread perceptions of urban environmental problems amongst participants related to failures to satisfy human needs. The degree to which basic Physiological needs of communities are satisfied was seen to be directly related to the enforcement of the political ideology that promoted separate development and disfranchised the majority of South Africans. Essentially, experience with apartheid ideology caused most participants to discount environmental policies and efforts at ensuring appropriate and sustainable environmental qualities throughout South Africa. Thus, if it is to be at all effective, future environmental policy in South Africa will have to be clearly and unequivocally linked to a development policy which promotes the entire spectrum of human needs from basic Physiological needs through Security, Social and Ego needs until personal needs for Self-realization are at least addressed.

Similarly, current planning policies in South Africa based on a specialist and separatist framework for the resolution of urban problems, are also clearly unacceptable. Inherited bureaucratic hierarchies, the lack of public participation in planning processes, together with limited awareness and understanding of environmental issues by both government officials and the general public do not promote a situation conducive to the introduction of local environmentally sound policies.

The constraining and regulatory approach adopted by the Environment Conservation Act (and other environmentally related legislation) seems to suggest that South African Government authorities are not recognizing the need for appropriate local resolution of environmental problems, but are attempting to impose "top-down" legislation. As this

process fails to recognize Social and Ego needs it is not in itself sustainable. The solutions proposed for most of the urban environmental problems identified in Chapter 5 depend more upon communication and co-operation at local level than upon national legislation.

Enactment of additional national environmental legislation will not address the inter-relatedness of environmental issues, it will only deal with transgressions retro-actively, and perhaps most important of all, it will not promote public participation in the resolution of environmental problems. This will deny the public a sense of "belonging" and "ownership", and will further distance public support from the basic principles of environmental conservation.

This study has found that South African urban environmental problems are so closely related to the legislative and bureaucratic legacies of apartheid that any attempt to address environmental policy in isolation will fail. Resolution of South African urban environmental problems must be sought by coupling future environmental policy to policies aimed at meeting the basic Physiological, Security, and higher order Social, Ego and Self-realization needs inherent in Maslow's hierarchy of needs.

BIBLIOGRAPHY

- Appleton C 1988 "Primary Obstacles to improving the quality of life of the newly urbanized" MIE Municipal Engineer Ingeneur October 1988, Vol 19, No 10, pp 38 - 49.
- Babbie ER 1973 "Survey Research Methods" Wadsworth Publishing Co, Belmont, California.
- Bernstein A 1987 "Cities and Citizens" Leadership: The Urban Foundation. Churchill Murray Publications, Cape Town. June, 1987: pp 34-39.
- Bernstein A 1985 "Influx Control in urban South Africa: an international and empirical view" in: Gilliom H, Schlemmer L (ed), "Up Against the Fences: Poverty, passes privilege in South Africa" David Phillip, Cape Town pp85-103.
- Botha L, Weinronk E 1990 "Practical Implementation of Balanced and Legally Appropriate Environmental Policies by Local Authorities" Sections 1-5 HSRC, Pretoria.
- Brand J 1985 "Orderly Urbanisation in South Africa" South African Journal of Property. Juta, Cape Town. December, 1985.
- Briggs PJS Municipality of Durban Westville. Personal Communication.
- Bunyard P, Morgan-Grenville F 1987 "The Green Alternative: Guide to Good Living" Methuen, London.
- Burki SJ, UI HAq M 1981 "Meeting Basic Needs: An Overview" World Development. Vol 9, No 2: pp167-182.
- Council for the Environment 1989 "Integrated Environmental Management in South Africa" Joan Lotter Publications, Pretoria.
- Craven G 1990 "ROEP: Plattelandse Suksesse en Betrokkenheid" LANDVOKON KONFERENSIE.
- Davies RJ 1989 "Land Use Structure and Qualities: Elements of a Scenario of the Future South African City" Conference of Southern African Surveyors, Cape Town.
- Dixon C, and Leach B 1984 "Survey in Underdeveloped Countries" Catmog 39, GeoBooks, Norwich, UK.
- Dixon C, and Leach B 1977 "Questionnaires and Interviews in Geographical Research" Catmog 18, Geo Abstracts, University of East Anglia, Norwich, UK.
- du P le Roux PJ 1986 "The Relevance of the Basic Needs Approach to the South African Situation" RSA 2000: Dialogue with the Future. HSRC, Pretoria, Vol 8 No 1, pp 4-8.

- Environmental Monitoring Group: Western Cape "Towards Sustainable Development in South Africa." Draft Discussion paper, 1991.
- Fuggle RF, Rabie MA 1983 "Environmental Concerns in South Africa: Technical and Legal Perspectives" Juta & Co Ltd, Cape Town.
- Gilbert A, Ward PM 1985 "Housing, the State and the Poor" Policy and Practise in Three Latin American Cities. Cambridge University Press, UK.
- Grest J 1988 "The Crisis of Local Government in South Africa" in: Frankel P, Pines N, Swilling M (ed), "State Resistance and Change in South Africa" Croom Helm Ltd in association with Methuen Inc. USA. pp 87-116.
- Haarhof E 1987 "Informal Settlement in the Durban Metropolitan Region: Demographic Factors and Population Projections" Paper presented to a Workshop on "Reforming the Law of Informal Settlements (Squatters)" organised by the Institute of Foreign and Comparative Law, University of South Africa, Pretoria. July, 1987. pp 2-5.
- Horgevoorst A Cape Town City Council. Personal Communication.
- Hulley DJ, Hall EJ, Pullen RA 1988 "Engineering for Integrated Environmental Management in Developing Areas" Paper delivered at the 1988 8th QUINQUENNIAL CONVENTION OF SAICE in co-operation with ANNUAL TRANSPORTATION CONVENTION titled "Environmental Conservation" at University of Pretoria. SAICE-ATC 88 - S.443, CSIR, Pretoria.
- Huntley B, Siegfried R & Sunter C 1989 "South African Environments into the 21st Century" Human & Rousseau, Tafelberg, Cape Town.
- Hyden G 1983 "No shortcuts to Progress: African Development Management in Perspective" Heinemann, London.
- James C Johannesburg City Council. Personal Communication.
- Jooste PG 1984 "GEOGRAPHY Only Guide for GG301-C (Perception of the Environment and Resources)" University of South Africa, Pretoria.
- Kaplan A 1964 "The Conduct of Inquiry: Methodology for Behavioral Science" Chandler Publishing Co, San Francisco, USA.
- Khan F 1990 "Involvement of the masses in Environmental Politics" Veld and Flora June 1990.
- Knill G 1990 "State, Structure and Strategy: South Africa's Municipal Elections" Antipode 22:1 1990: pp73-84.
- Maslow AH 1968 "Towards a Psychology of Being" 2nd Ed., Van Nostrand, New York.

- McCarthy JJ, Smit DP 1984 "South African City: Theory in Analysis and Planning" Juta & Co, Cape Town: pp57.
- Møller V 1986 "Rural Black's Perceptions of Basic Needs Fulfilment" RSA 2000: Dialogue with the Future. HSRC, Pretoria, Vol 8, No 1: pp 9-26.
- Oppenheimer H 1990 "The Age of Reason" Leadership Vol 9 June 1990 pp 10 - 12.
- Pacione M 1990 "What about People? A Critical Analysis of Urban Policy in the United Kingdom" Geography July, 1990. Vol 75 Part 3, pp 193-202.
- Scott Peck 1987 "The Different Drum" Simon and Schuster, New York, USA.
- Smith D 1982 "Living Under Apartheid" George Allen and Unwin (publ) Ltd, London, UK.
- Smuts JC 1987 "Holism and Evolution" N & S Press, Cape Town, South Africa.
- South Africa. Department of Planning and Environment 1975 "National Physical Development Plan" Government Printer, Pretoria.
- South Africa. Environment Conservation Act 1989 In: South African. Government Gazette, Vol 288, No 11927, 9 June 1989. Government Printer, Cape Town.
- Sunter C 1987 "The World and South Africa in the 1990's" Human and Rousseau, Tafelberg, Cape Town.
- Tongaat-Hulett Properties Ltd. 1989 "The Durban Functional Region - Planning for the 21st Century." Report 1. The Current Situation: Executive Summary.
- Transvaal. Local Government Commission [1921] 1922 "Report of the Local Government Commission 1921" Chairman: Stallard. Government Printing and Stationery Office (T.P./1922).
- Wilson F, Ramphela M 1989 "Uprooting Poverty: The South African Challenge" Report for the Second Carnegie Inquiry into Poverty and Development in South Africa. David Philip, Cape Town, South Africa.
- Watson V 1991 "What kind of cities do we want to live in?" UCT News Magazine. May 1990, Vol 18 No 1. pp 16-18.
- World Commission on Environment and Development 1987 "Our Common Future" Oxford University Press, UK.

ANNEXURE A

LETTER TO PARTICIPANTS

<data address.doc>

June 1988

<addressee>

<name>

<box>

<city>

<code>

Dear <mr>

INTERVIEW : URBAN ENVIROMENTAL CONSERVATION

I refer to our recent telephone conversation and thank you for affording me the opportunity to interview you with regard to the above topic. I confirm that we are due to meet at your offices at <time> on <day>, <date> June 1988.

The title of the research project with which I am involved is:

"Practical implementation of balanced and legally appropriate environmental policies by local authorities".

The research is being conducted under the auspices of the Human Needs, Resources and Environment Programme of the Human Sciences Research Council.

The need for this research arises from the requirement, in terms of the Draft Environment Conservation Bill, for every local authority to implement the national policy for environmental conservation provided for in clause 2(2) of the Bill. Relevant extracts from the Draft Bill are enclosed herewith. The Bill is due to be tabled before Parliament in 1989.

At present manifestations exist of a lack of harmony in people's approaches with regard to the conservation of resources and ecosystems within and around the urban environment. One of the objectives of this research is to ascertain what problems are likely to be experienced with existing legislation in implementing the environmental policy at the local authority level.

The aim of this research is to prepare a set of model environmental by-laws based upon our findings. It is intended that these by-laws will be available for adoption by local authorities in South Africa.

For the purpose of conducting this research it is necessary, *inter alia*, to ascertain from representatives of government organisations (particularly local authorities), public interest groups, private enterprise and private individuals:

1. the problems they experience in the practical execution of measures for the protection of the urban environment;
2. what environmental aspects should be controlled through legislation;
3. what form of legislation, if any, should be implemented at local authority level.

The interview with you will form part an important part of this research and will make a valuable contribution to reaching the objectives of the project. I wish to assure you that your answers and comments during the interview will be reported in a confidential manner so as to ensure your anonymity.

I would like you to view the questions I shall pose to you within the framework of the enclosed document headed "Orientation Document". This document explains, and serves to direct your attention to, several aspects of "activity spaces" in the urban environment. It is in these activity spaces where legislation, or some other issue, could inhibit the implementation of the national policy on environmental conservation. However, please bear in mind that this framework is not intended to limit you in the range of your responses to the questions which I wish to pursue with you. These questions are set out in the enclosed document headed "Questions".

Should you find that it is more convenient to respond to the questions in writing, please feel free to do so. It would also greatly assist us in our research. However, for the sake of conformity, it will still be necessary for me to conduct the interview with you and to make reference to your written responses in the interview.

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

Should you encounter any difficulties, please telephone me at the University of Cape Town at 021-650-287<office> or at home at 021-<home>. After 7 July 1988, and until 23 July 1988, I shall be contactable at Johannesburg telephone number <home2>.

Yours faithfully

<signed>

One of the following postscriptums was added to each letter:

1. For representatives of local authorities:
"I am seeking to interview you in your professional capacity. I am thus interested in establishing your personal responses to the questions posed."
2. For representatives of non-government organisations and private enterprise:
"I am seeking to interview you in your personal capacity as well as representative of xxxxxxxxxxxx. I am thus interested in establishing, through you, the responses of xxxxxxxxxxxx to the questions posed."

ANNEXURE B

EXTRACTS FROM THE DRAFT BILL ON ENVIRONMENT CONSERVATION

(Government Notice 798 of 1987 published in Government Gazette number 11013 dated 30 October 1987)

PART 1

A - NATIONAL POLICY FOR ENVIRONMENTAL CONSERVATION

Statement of principles and determination of policy in respect of the environment.

2. (1) This Act shall be interpreted and implemented so as to advance and uphold the following principles:

- (a) Every inhabitant of the Republic of South Africa is entitled to live, work and relax in a safe, productive, healthy and aesthetically and culturally acceptable environment.
- (b) Every human generation has a moral responsibility to act as trustee of its natural environment and cultural heritage in the interests of succeeding generations.
- (c) Every person or institution has an obligation to consider carefully all actions which may have an influence on the environment and to take all practicable means to ensure the protection, maintenance and improvement of both the natural and the man-made environments.
- (d) The preservation of natural systems and processes is essential for the meaningful survival of all life on earth.
- (e) Living natural resources are renewable and can be utilised indefinitely with discretion, while non-living natural resources are finite and their utilisation can only be extended by judicious use and maximal re-use.
- (f) Co-ordinated and purposeful research is essential to gain and apply knowledge of all the facets of the environment and the interaction between man and environment, in order to reconcile provision for the reasonable needs of man with effective protection of the environment.
- (g) Comprehensive and sustained tuition and interpretation and dissemination of information is essential for the establishment of an informed population for the promotion of rational utilisation of the total environment.

(2) The Minister may by notice in the *Government Gazette* and subject to the principles contained in subsection (1) and the provisions of subsection (3) determine the general policy in respect of -

- (a) the protection of ecological processes, natural systems and exceptional natural beauty as well as the preservation of biotic diversity in the natural environment;
- b) the promotion of sustainable utilisation of species and ecosystems and the effective application and re-use of other natural resources;
- c) protection of the environment against unnecessary disturbance, deterioration, defacement, poisoning or destruction as a result of man-made structures, installations, processes or products;
- d) the establishment, maintenance and improvement of living environments which contribute to a generally acceptable quality of life for the inhabitants of the Republic of South Africa.

(3) The policy envisaged in subsection (1) in respect of any aspect shall be determined by the Minister after consultation with the council and in concurrence with -

- (a) every Minister of a State Department with a mandate concerning the particular aspect of the environment;
- (b) the administrator of every province;
- (c) the Minister of Finance.

(4) The Minister may at any time, subject to the principles contained in subsection (1) and the provisions of subsection (3), substitute, withdraw or amend the policy determined in terms of subsection (2).

B -- EXECUTION OF POLICY

Execution of policy

3. (1) Each Minister of a state department, each administrator and every authority and government institution responsible for a matter which influences the environment or has a bearing thereon, shall properly consider the policy determined in terms of section 2 in execution of their official duties.

(2) In the preparation of draft legislation concerning a matter in respect of which policy has been determined in terms of section 2, there shall be consultation between the authority responsible for the drafting of such legislation and the Minister.

(3) All other laws shall be interpreted and administered in accordance with the principles and policy contained in this Act.

ANNEXURE C

ORIENTATION DOCUMENT

FUNDAMENTAL ACTIVITIES

Human beings in the urban environment are fundamentally engaged in living, working and recreation activities. The contexts in which these activities take place are, for the sake of this project, referred to as "activity spaces". The following are some elements of the Living, Working and Recreation activity spaces:

Living Space

The Living Space relies upon the relationship between and the layout of the following essential components:

a) Physical Shelter

The provision of shelter (such as houses, flats, shacks and townhouses) satisfies a basic need. Security of tenure has a stabilising influence on the community.

Certain policies at a national level limit the community's choice of living areas. This inhibits the "natural" growth process and the spatial relationships between living and working.

b) Connections/Routes

In addition to facilitating movement, this component (such as streets, paths, tracks, pavements and verges) can allow for security, convenience and a pleasant aesthetic experience.

c) Public Open Space

This component (such as playgrounds, community fields, local trails, public squares) can make a positive contribution to the Living Space. In-between and left-over spaces are often relied upon to provide this function.

Commercial activities provide utilities to the community and influence the interaction of the major activity spaces referred to in this document.

Historical areas and buildings have the potential to enrich the Living Space and to provide a sense of cultural perspective.

Working Space

The "Work Place" of the urban population is to be found in the Central Business District, industrial areas, suburbs and informal areas. There are mixed-use areas giving rise to possible conflicts between residential needs on the one hand and trading, waste and services on the other.

The retention and incorporation of historical areas and the natural environment can be included in the policies for planning and development of the Working Space.

Recreation Space

In the provision of formal, semi-formal and unstructured Recreation Space the following constraints are relevant in terms of the needs of the urban population:

- * the scale of the facility being provided in relation to the numbers of potential users,
- * the viability and sustainability of resources, both natural and man-made,
- * what facilities exist or are provided,
- * the access in terms of both
 - i) the distance of the Recreation Space from the Living Space and available transportation,
 - and
 - ii) the use of access control measures (such as charges and hours) to control the behaviour of users,
- * the incorporation of natural, as opposed to political, boundaries in the delimitation of the space,
- * the incorporation of historical areas.

ADDITIONAL COMPONENTS

Transportation and services form an integral part of the urban environment. Besides requiring planning, development and administration themselves, they influence the planning, development, administration and use of the activity spaces. Some elements of transportation and services relevant to this project are the following:

Transportation

Transportation in this sense addresses the movement of people, goods and services between activity spaces.

The following elements of transportation can impact upon the social, natural and built environments:

- * Transportation systems and networks
- * Parking facilities
- * Intersections
- * Routes
- * Termini
- * Visual filters

Services

The provision of services to the population entails supply, siting, layout and management.

Basic services deal with the supply and reticulation of water, telecommunications and electricity as well as the removal of waste. This results in large areas being set aside and utilised for:

- * sewerage farms
- * disposal sites
- * waste transfer
- * dams and reservoir
- * power stations.

Although social services such as Health and Education are controlled by higher tiers of government, local government assists the formulation of relevant strategies by identifying needs, informing higher tiers and ensuring that these services are provided.

ANNEXURE D

QUESTIONS POSED TO PARTICIPANTS

GROUP 1. RELEVANT LEGISLATION

There are several pieces of legislation in South Africa dealing with the protection and controlled use of the urban environment in the context of its planning, development and administration.

Within which Acts, Ordinances, By-laws or Regulations have you operated?

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

- 2.1 In operating within the legislation have you experienced any problems with it? If so, what are these problems?
- 2.2 Do you foresee any other problems in operating within the existing legislation and/or the principles set out in Clause 2 (enclosed) of the Draft Bill?
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

Are you aware of other relevant legislation within which you have not operated? If so, please:

- 3.1 furnish details of that legislation, and
- 3.2 advise why you have not operated within such legislation.

GROUP 4. OTHER PROBLEMS AND SOLUTIONS IN RELATION TO THE PROTECTION AND CONTROLLED USE OF THE URBAN ENVIRONMENT IN SOUTH AFRICA.

- 4.1 Have you experienced, or do you foresee, any other problems which are not dealt with by existing legislation or Clause 2 (enclosed) of the Draft Bill?
If so, what are these problems?
- 4.2 Do you have any solutions to propose for the problems experienced or foreseen by you? If so, what are your proposed solutions?

GROUP 5. FORM OF LEGISLATION

What form of legislation do you believe should be implemented through and by local authorities to ensure the protection and controlled use of the urban environment?

(This "form" could include aspects dealing with the approach to, as well as the structure, type and range of legislation.)

ANNEXURE E

LIST OF PARTICIPANTS

E.1 INDIVIDUAL PERSONS

Mr JH Canavan	High School Principal
Mr GT Fagan	Architect
MR RA Fone	Retired City Engineer, Chairman Wildlife Society of Southern Africa
Mr HJP Lebona	Catholic Field Worker
Rev GL Nyangane	Methodist Minister
Rev O Ntshanayana	Methodist Minister
Rev T Vimbela	Methodist Minister

E.2 REPRESENTATIVES OF LOCAL AUTHORITIES

CAPE PROVINCE

BELLVILLE

Mr GD Haasbroek	Parks, Gardens and Recreation, Bellville
Mr AW Malan	Senior Town Planner, Bellville

CAPE TOWN

Mr H Paton	Chief Engineer, Projects
Mr S Solomon	Building Survey Branch
Mr G Boddington	Environmental Planning

GEORGE

Mr RA Donian	Park, Gardens and Forestry
Mr B Steyn	Town Engineer
Mr J Vrolijk	Town Planner

GOMPO

Mr Cronje	Chief Executive Officer
Mr EN Makeba	Mayor

KNYSNA

Mr PJJC Coertsen	Town Engineer
Mr J Lombaard	Chief Health and Housing

KUILS RIVER

Mr H Diedericks	Senior Health Inspector
Mr A Coleske	Deputy Town Clerk
Mr P Gericke	Town Engineer

MILNERTON

Mr SP Wood	Retired Town Engineer and Acting Town Clerk
Mr DJ Brook	Town Engineer

PAARL

Mr WA Swanevelde Town Planner
 Mr GB Tong Civil Engineer: Parks and Cleansing

QUEENSTOWN

Mr AL Jerrard Deputy Town Planner
 Mr H Stroebel Director of Health and Recreation

UITENHAGE

Mr A Farrington Director of Parks and Amenities
 Mr CJ Theart Chief Town Planner

TRANSVAAL**BRAKPAN**

Mr RM Potgieter Town Planner
 Mr J White Deputy Chief of Parks and Recreation
 Mr JD Koert Parks Curator

DIEP MEADOW

Mr S Matlhabegoane Parks and Recreation

JOHANNESBURG

Mr PJ Laubser General Manager: Parks and Recreation
 Mr AM Goldsmith Information and Research Officer
 Mr C James Urban Planning Policy Section
 Mr J van Resnburg Johannesburg Metropolitan Planners
 Mr M Kirby (JOMET)

MIDRAND

Mr MJK Rossouw Deputy Chief: Health Services
 Mr J Olesen Acting Chief Town Planner

PIETERSBURG

Mr WJ Pienaar Town Engineer
 Mr PF van der Merwe Head of Parks, Sport and Recreation
 Mr DJ Fraser Chief Health Officer
 Mr A Lindeque Chief Town Planner

PRETORIA

Mr MJ Theron Deputy Director of Parks and Recreation
 Mr N Sterk Director of Transport
 Mr EF Liebenberg Senior Deputy Director
 Dr R Geigher Senior Deputy City Engineer
 Mr JC Malherbe Deputy Director of Town Planning

RUSTENBURG

Mr JG van Niekerk Head Horticulturalist

Mr PCC deJager Chief Town Planner

NATAL

EMPANGENI

Mr LE Kotze Town Clerk

LADYSMITH

Mr Bozyczko Director of Works
Mr A Bakker Superintendent of Parks
Mr J Komp Deputy Borough Engineer

VERULAM

Mr JW Ivins Borough Engineer

ORANGE FREE STATE

BETHLEHEM

Mr JA Fourie Head of Parks and Recreation

HEIDEDAL

Mr TC Solomon Chairman Heidedal Management Committee

MANGUANG

Mr GDJ Scholtz Town Clerk

E.3 NON-GOVERNMENT AND COMMUNITY ORGANIZATIONS

Actstop: Johannesburg Central Advise Centre
Africa Tree Society
Bethlehem Alliance Action Committee
Built Environment Support Group
Botanical Society of South Africa
Captrust
Central Business District Association
Community Residential Information Network
Development Bank of South Africa
Durban Housing Action Committee
Industrial Health Unit, University of Natal
Justice and Reconciliation
Kwasulu Bureau of Natural Resources
Landowners Association of Edendale
Legal Resources Centre
National Environmental Awareness Campaign
Parktown Residents Association

Planact
Port Elizabeth Against Removals
Red Ons Eie Platteland
Save Gordons Bay Society
Simon Van Der Stel Foundation
Urban Foundation
Valley Trust
Wildlife Society of Southern Africa
Wilgespruit Fellowship Centre

3.4 PRIVATE ENTERPRISE REPRESENTATIVES (INDIVIDUALS)

South African Institute of Civil Engineers
South African Institute of Town and Regional Planners
South African Insitute of Public Administration