THE PLANNING OF CATO MANOR: LESSONS FOR THE SUSTAINABLE RECONSTRUCTION OF SOUTH AFRICAN CITIES

by

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PREFACE

The work described in this thesis was carried out in the Department of Geographical and Environmental Sciences, University of Natal, Durban from February 1993 to September 1994. The thesis was completed in the Centre for Social and Development Studies between October 1994 and July 1995. The project was supervised by Dr. Debra Roberts during 1993, and co-supervised by Dr. J. Robinson. Supervision changed hands in 1994, when Dr. J. Robinson played the role of supervisor, and Dr. W. Ellery, co-supervisor.

These studies represent original work by the author, and have not been submitted in any form to another university. Where use was made of the work of others, it has been duly acknowledged in the text.

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ABSTRACT

This thesis provides an overview of the history of urbanisation in South Africa, showing how the resultant fragmented, sprawling spatial form serves to degrade the environment as well as aggravate the plight of the poor. It is argued that science has played a significant role in affecting the way in which planning interacts with the environment. Science has allowed for the domination over, and the manipulation of the natural environment. The popularity of positivism has served to entrench a dualism between the natural world and people - resulting in both entities being planned for separately. This control over the natural environment is most apparent in cities. In an attempt to alleviate the marginalisation and domination of the natural environment, a number of radical approaches towards the environment have gained popularity internationally, including ecofeminism and ecosocialism. It is argued however, that these radical approaches are inappropriate within a South African context, as they serve to politicise the environment, and are in fact inherently reductionistic and dualistic.

This thesis suggests that sustainable development is an appropriate paradigm to bridge this duality, as it addresses the long term needs of people and the natural environment. A sustainable development approach for cities takes its lead from Local Agenda 21, which encourages cities throughout the world to develop strategies to ensure an improved quality of life for all their inhabitants, without depleting the natural resource base upon which city functioning depends.

South Africa is currently undergoing a period of dramatic political and social change. Associated with this transition, new ways of reconstructing cities to increase the quality of life of all South Africans, especially the poor and marginalised are envisaged. This would necessarily include increasing the efficiency of the present urban form. The re-development of Cato Manor is used as a case study, illustrating its potential to contribute towards a model for sustainable urban development. This is done through a critique of the planning process as it is unfolding presently. The period of transition provides scope for the introduction of a sustainable development model within planning for low income communities in the Cato Manor project. However, the development has been plagued with

a number of challenges including institutional, legal, financial, environmental, capacity and public awareness. These challenges have thus far hindered the successful introduction of a sustainable development model, as the development does not appear to meet a primary objective of sustainable development - alleviating poverty and increasing the quality of life of all people, without imposing unsustainable demands on the natural environment.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF PLATES

INTRODUCTION

THE SOUTH AFRICAN URBAN CRISIS

South African cities rank amongst the most inefficient and wasteful urban environments in the world (Walmsley and Botten, 1994). This can be attributed to the spatial form of cities, which are typically characterised by sprawl and fragmentation, with strong cultural divisions between different residential areas and the more general separation of land uses. It has been argued that this has led to wasteful technologies, underpriced resources and great disparities in resource consumption. In short, South African cities are unsustainable.

The major environmental problems in urban areas stem from high rates of urbanisation, lack of a holistic urban development policy or of progressive urban planning promoting sustainable development, and increasing levels of poverty amongst urban dwellers (IDRC *et al*, 1994). The situation is exacerbated by a lack of integration of environmental planning into urban planning. In summary, there has been a lack of vision, environmental concern and a holistic approach to planning and management of the urban environment.

A central concern of the ruling white government throughout this century has been to prevent black urbanisation. The legacy of this policy - segregated, degraded, overcrowded black areas - is the core of the urban environmental crisis in South Africa. Black communities are not serviced adequately in terms of basic services, they are often located adjacent to negative externalities such as polluting industries and airports, and are situated at great distances from their places of employment. They are subject to overcrowding, with no open spaces, and are serviced with poor public transport.

The process of black urbanisation has not been deterred by the absence of housing and basic infrastructure, and the existence of influx control and pass laws until 1986. On the other hand, poverty, land dispossession, overcrowded conditions on allocated land, confinement to areas of low agricultural productivity and frequent drought, have all forced people from the rural areas to the cities. However, the apartheid state's refusal to accept and plan for this process has left cities unprepared for this influx. South African cities are

hence witnessing an unprecedented increase in the number of squatting and informal settlements emerging on the urban fringe.

Any discussion of urban environmental problems in South Africa must be seen against the backdrop of this ongoing process of urbanisation. The overcrowding of existing townships is putting the already inadequate housing and service infrastructure under impossible strain. People who establish their own informal housing on vacant ground live under severe deprivation, with little or no provision of services. The inadequacy of the government's response to the needs of the growing urban population to date is having consequences both on the health of the people and on the long term integrity of the environment.

THE FUTURE

South Africa has reached a point in its history whereby it has become necessary to provide formal housing and employment for the disadvantaged race groups, especially in areas with easy access to the city centre. Along with this comes the demand for the redistribution of resources and restitution of land to those who were removed from inner-city areas as a result of mass removals that occurred as a strategy to enforce the system of apartheid.

The quest for reconstruction and development in this apartheid-torn country raises some important questions. Clearly, reconstruction is necessary, but what kind of reconstruction is called for? Development in South Africa is unquestionably also necessary, but what kind of development is necessary? Typically, a country's development incorporates at least two major components; growth in aggregate wealth and per capita production; and the improvement in the quality of life of all citizens (Clark, 1994). Since the 1980s, a third component, "sustainability" has been added to the development discourse. This thesis is particularly concerned with elaborating upon the implications of a sustainable development approach within the urban context. Sustainability has the added component of maintaining the long-term integrity of the natural environment, and hence requires that "social interaction is organised to take account of the natural implications of new forms of social life" (Cole, 1994).

The Reconstruction and Development Plan (RDP) for South Africa emphasises a commitment to incorporating sustainable developmentas a strategy for redevelopment. This is a formidable task, as South Africa is a country with disparate social and economic dynamics; it is characterised by features of both developed and developing nations. Planning for the sustainable development of urban environments in post-apartheid South Africa is indeed a multi-dimensional challenge. Decades of social engineering during the apartheid era have excluded the majority of South African citizens from having basic human rights, which, *inter alia,* resulted in millions of people living in sub-standard environments. As a consequence, a large component of any sustainable urban development initiative will necessarily involve the appropriate delivery (in many cases for the first time) of water and sanitation services, housing and food security, transport and telecommunications, to those in need (Clark, 1994), in addition to sustaining the natural resource base upon which the development depends.

CASE STUDY: CATO MANOR

The redevelopment of Cato Manor west of Durban's city centre (Figure1), is an important example of a (redistributive) urban development, and demonstrates the new government's concern with redistributing land and resources amongst the people of South Africa within the urban areas after many years of being unplanned and vacant during the apartheid era.

In the early 1930's the main land owners in Cato Manor were largely Indian, who rented land to Coloureds, Africans and Indians. Under the "Slum Clearance Act" of 1936, a vast majority of these people were forcibly removed from the area by the 1960's to outlying areas reserved for designated "race groups". In 1954 the Group Areas Board advised that Cato Manor be proclaimed for white occupation, and despite much protest by Cato Manor residents, the area was officially proclaimed a white group area in 1958. After decades of indecision as to the fate of this land, the South African Government eventually transferred portions of the land to the Durban City Council and the House of Delegates in the 1980s.

The first moves towards the comprehensive development and planning of Cato Manor were seen in 1992. A Steering Committee, reporting to the Cato Manor Development Forum

(CMDF), which represented all major stakeholders, was appointed to prepare a policy framework to guide the development initiatives. The final draft of the policy framework for Greater Cato Manor was released in June 1992. The planning group for the Cato Manor development was appointed by June 1993, following which the planning procedure itself was initiated. The development of Cato Manor is expected to be completed by the year 2001.

The development of Cato Manor is a response by the city council to the need to provide an orderly, integrated and compact development in the heart of the Durban Functional Region to meet the demands of post-apartheid urban development. According to the policy document drawn up by the Cato Manor Development Forum (1992), the aim is to provide a range of lifestyle, residential, recreational and employment opportunities, particularly for those originally removed from the area, as well as for the poorer residents of the Durban Functional Region. The housing development is therefore primarily aimed at low to middle income communities; providing mixed income residential areas for these income groups.

The environmental problems emanating from housing developments for low income sectors of society typically have adverse effects on the quality of life of the residents of these areas. The most immediate and most apparent environmental problems facing developments of this nature and scale are; unsafe water, inadequate sanitation, land degradation, indoor and urban air pollution. Collectively these problems have been dubbed the "brown agenda". In addition, there are a host of other less obvious environmental repercussions resulting from high density, low income housing, which are potentially psychologically damaging to the individuals residing in the area.

The achievement of sustained and equitable development, which maintains a healthy balance between environmental and developmental priorities for Cato Manor (and future developments of this nature in South Africa) presents a great challenge to urban planners. Recent years have witnessed rising concern about whether environment constraints will limit development and more importantly, whether development will cause serious environmental damage in turn impairing the quality of life of this and future generations.

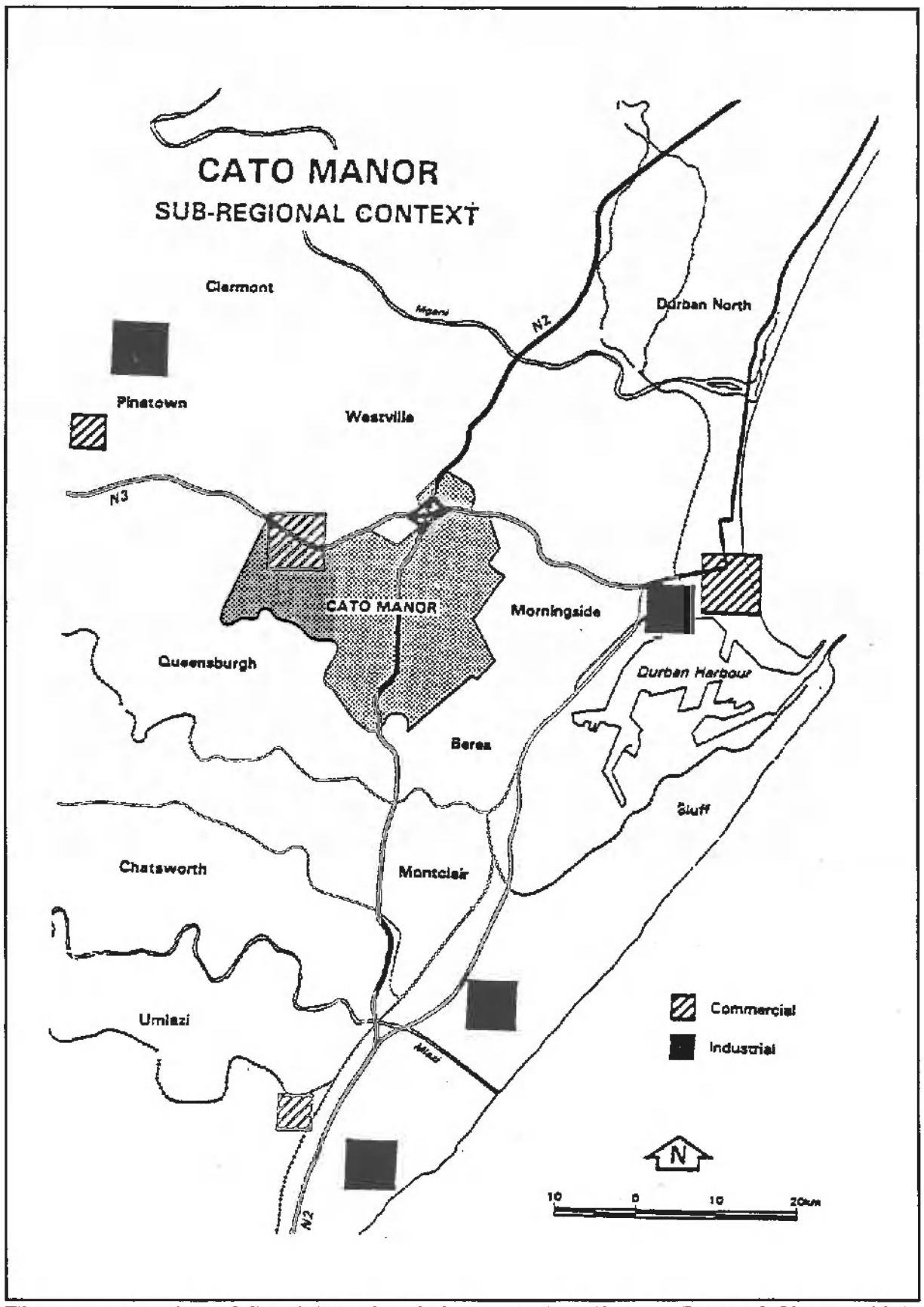


Figure 1: Location of Cato Manor in relation to Durban (Source, Day and Chetty, 1993).

Historically, development has too often ignored environmental issues. The long term consequences of degraded soils, depleted aquifers and destroyed ecosystems have hidden pecuniary repercussions as these resources are finite.

Due largely to a crisis in perception which encourages a dualism between the environment and people, development in South Africa has traditionally occurred in a technocentric and reductionistic manner, with little regard paid to environmental considerations. The dualistic, reductionistic and technocentric history of South African urban planning and development has been the direct cause of considerable environmental malaise. In order to meet the long term inner-city housing and employment needs of a large number of people, it is imperative that an approach which encourages development compatible with environmental considerations be adopted. In order to increase their standard and quality of life of the poor, planners cannot adopt an ecocentric standpoint. However, it is also imperative not to sacrifice a high level of living and environmental quality in the name of development, as this will have negative environmental and developmental repercussions in the future. The reality of achieving a "sustainable" level of development without attaining "a tragedy of the commons" is a significant challenge facing South African city planners. This thesis contributes towards the development of a framework that promotes an environmentally sustainable approach to urban development in contemporary South Africa.

PROBLEM STATEMENT AND OBJECTIVES

It is clear that the crisis in South African urban areas is deeply rooted in the political and economic folly of separate development. However, the legacy of apartheid will remain long after the legal system has been dismantled. The development of Cato Manor is only an example of the broader process of political and socio-economic change that is currently unfolding in South Africa, and is hence considered here to be a typical South African case study. It is clear that the development initiatives for this area will be seen as a possible model for other major inner city development projects in the Post Apartheid South Africa. It is therefore imperative that the planning process is as holistic and synthetic as possible. Without a clear policy with regard to sustainable development for urban reconstruction, the environmental and social consequences of a development of the scale and complexity

envisaged for the Cato Manor area could simply reproduce the problems of old-style South African planning.

To date two significant studies concerning the environmental impacts of development in Cato Manor have been carried out. A report by Roberts (1992) comprises an ecological survey of the Cato Manor area, highlighting the areas of ecological importance within the municipal open space system designed for Durban. A second report researched by the Environmental Conservation, Parks and Recreational Facilities Working Team (1995) for the CMDA identified and provided a rationale for selection of areas for open space purposes (passive and active) in Greater Cato Manor. This report also outlines policy with regards storm water management in the area. It is significant to note that the environmental inputs to the development have had a strong open space planning bias. It was therefore apparent that there was an urgent need for a more holistic treatment of environmental considerations, especially "brown agenda" issues, in Cato Manor.

This thesis will offer an assessment of the planning and development initiatives for Cato Manor to date (June 1995), considering the extent to which they ensure that a liveable environment will be created and maintained for future residents of the area. This thesis opens up the debates around the appropriateness of a sustainable development approach to urban planning in South Africa. In so doing, it is hoped that this thesis will contribute towards an environmental policy framework for future urban development initiatives based on both the Cato Manor initiative and general international experiences.

The objective of this thesis is to contribute towards an alternative framework for urban development which incorporates the environment as part of development, and which will secure a better quality of life for the poor in urban areas. This is achieved by analysing the sustainability of the development process unfolding in Cato Manor, reflecting also on the influence that the history of Cato Manor has had on the sustainability of the present development process. It is hoped that this critique will provide the basis for recommendations for future sustainable urban development policy in South Africa.

STRUCTURE OF THE THESIS

Chapter one presents an historical examination of South African urbanisation patterns with an emphasis on the environmental consequences of the planning practices which have shaped out city form. The intention of this review is to bring to the fore the need for a re-structuring of the environmental philosophy that has underpinned city planning. The philosophical basis of these environmental and planning ideologies is examined in chapter two, focusing on how changing conceptualisations of science have contributed to different ways in which the environment has been dealt with in the planning process. The concept of sustainable development will be introduced here and it will be argued that this philosophy has the potential to provide a new, holistic basis for development. Chapter three draws on the experiences gained from Global Forum '94, a Conference held in Manchester in June 1994 on "Cities and Sustainability". This chapter explores the concept of sustainable development in more detail, illustrating how it balances environmental and developmental needs whilst addressing the welfare of the poorest groups. The terms of reference for this framework will be defined, and a number of debates and incipient critiques concerning this alternative development agenda are raised.

In order to contextualise a framework for sustainable urban development elaborated in the first three chapters, initiatives to develop the Greater Cato Manor Area in Durban for low income housing will be analysed. This case study is introduced in chapter four. This chapter provides an historical background to this contentious area. This is deemed necessary, as the present planning process has been significantly influenced by the history of the area. Furthermore, the past reality of Cato Manor is precisely what the present development is attempting to prevent. Chapter five represents a critical analysis of the proposed development initiatives as well as of the process that has led to these initiatives. This chapter serves to assess the lessons that the Cato Manor development has for the emergence of an alternative framework for urban planning in South Africa from a sustainable development perspective. The final chapter (chapter six) highlights a number of potential challenges with regards the use of sustainable development as a strategy for the future reconstruction of South African cities. Recommendations towards future policy for city planning are also put forward.

Through a commitment to both social and environmental equity, it is hoped that this thesis will make a contribution towards the sustainable reconstruction and development of South African cities.

Chapter 1
URBAN FORM AND SUSTAINABILITY

1.1 INTRODUCTION

A major factor affecting the sustainability of urban areas is the shape of settlement patterns in cities, towns and villages, ie. urban form (Breheny and Rookwood, 1993). Urban form influences the patterns of private transport, which in turn affect fuel consumption and emissions. Similarly, the viability and patronage of public transport facilities, and also consumption and emissions, are affected by urban form. The rate at which rural land is converted into urban land is also a function of urban form. Certain urban forms and the management thereof might also involve the loss of green spaces and habitats within urban areas.

Urban form is therefore a significant determinant of sustainability. However, it is possible that environmentally desirable urban forms may be less desirable in economic and social terms (Breheny and Rookwood, 1993). For example, higher urban densities may lower the overall quality of life. The implication is that trade-offs have to be made between socio-economic and environmental gains if a sustainable urban form is to be achieved. Since land use is related in fundamental ways to environmental change, planning policies have the potential to be important instruments of sustainable development (Owens, 1995).

This chapter examines the effects of urbanisation patterns in South Africa on urban form. Here the additional impacts of Apartheid city form are a significant consideration, and the implications of the present South African urban form for sustainable development are discussed. In order to move towards a more sustainable urban form, a framework for re-thinking of how cities are planned is presented.

1.2 URBANISATION AND THE ENVIRONMENT IN SOUTH AFRICA

Urbanisation has been described as one of the strongest forces shaping contemporary South African society (Dewar, 1992b). While the current rates and scale of urbanisation are

difficult to determine precisely, Dewar (1992b:243) has identified certain features that typify the urbanisation process:

> "First, most urban growth is occurring in and around the four major metropolitan areas: Pretoria-Witwatersrand-Vereeneging; Durban; Cape Town; and Port Elizabeth-Uitenhage. Second, although in-migration is occurring apace, most urban growth is the result of natural increase: the urban explosion is irreversible and will continue for a long time to come. Third, the highest rates of growth are amongst the poorest people: the dominant demographic tendencies are faster, younger, and poorer. Fourth, accompanying this dynamic of growth are high and increasing levels of poverty, inequality and unemployment, with a large and increasing proportion of people seeking survival in the informal economic sector."

Since the Nationalist government came into power in 1948 and until the mid-1980s, urban planning deliberately and vehemently prevented black urbanisation. This policy has resulted in segregated, degraded, overcrowded black areas, which constitute the core of a growing urban environmental crisis in South Africa (Lawson, 1991). However, the process of black urbanisation was not deterred by the absence of housing and basic infrastructure, or by the existence of influx control and pass laws. On the contrary, black informal settlers have begun restructuring and rebuilding South African cities as rates of black urbanisation have increased dramatically over the past decade. However, the chronic lack of space and facilities for low-income people in urban areas has created huge environmental and developmental problems that will have to be dealt with by planners of the post-apartheid city.

The process of urbanisation has profound implications for any discussion of urban environmental problems in South Africa. Existing townships are severely overcrowded and offer few social and economic opportunities for their inhabitants. This overcrowding is putting the already inadequate housing and service infrastructure under enormous strain. People who establish their own informal housing on vacant ground suffer even worse conditions due to a lack of access to safe water, proper sewerage, refuse removal and urban air pollution. The inadequacy of the government's response to the needs of the growing urban population is having consequences both on the health of the people and on the long term integrity of the environment (Lawson, 1991).

Urban systems have three types of impacts on the natural environment (Dewar, 1991). These are extractive, absorptive, and expansive. The daily needs of people and their requirements for clean water, air, food, minerals and energy, constitute the extractive demand. Activities within cities generate solid, liquid and gaseous wastes which must be broken down and/or absorbed by the environment. Although these wastes are generated locally, they have the potential to have regional repercussions through contamination of ground water, the movement of gaseous pollution, and the pollution of fresh water and marine environments. Finally, there is the expansive demand of cities to accommodate growth. As cities expand, vast tracts of the natural environment are consumed and made sterile, further limiting the extractive and absorptive capacity of the environment.

South Africa has reached a point in its history where the need to provide inner-city formal housing and employment for the disadvantaged race groups has become urgent. Along with this comes the redistribution of resources and the restitution of land by those who have been removed from inner-city areas as a result of the mass removals that occurred as a strategy to enforce the system of apartheid. The redevelopment of Cato Manor, west of Durban, is an important case in point, and demonstrates the new government's attempt to redistribute land and resources amongst the people of South Africa within the urban areas after many years of stagnation during the apartheid era.

The Reconstruction and Development Programme, which was launched as the new government's plan to improve the quality of life of all South Africans, offers enormous opportunities to public decision makers to improve significantly the performance of South African cities, and to rectify many problems generated by past inappropriate decisions. Dewar (1992a) emphasises that in order to achieve this, authorities require a framework of intent to identify the types of projects that should be encouraged and initiated.

This framework should address the fundamental questions of how urban growth should be accommodated and managed to best meet the needs of the inhabitants, as well as the qualities that should be encapsulated within our cities to ensure that qualitatively rich, efficient and socially supportive environments emerge and are enhanced over time (Dewar and Uytenbogaart, 1991). This thesis suggests that a sustainable development framework

can adequately address these questions. The first step towards the development of such a sustainable development famework for South African cities necessitates an assessment of the current urban situation and the historical factors that have resulted in the present urban form.

1.3 FORM AND FUNCTIONING OF THE SOUTH AFRICAN CITY

1.3.1 Nature of Urban Problems

South African cities exhibit a number of unique spatial and structural characteristics. These are as a result of the vigorous implementation of apartheid policies, as well as management responses to the apartheid city. At the level of the urban whole Dewar (1992a, 1992b) identifies three primary spatial patterns that characterise South African cities: sprawl, fragmentation and separation. This spatial form has been described as "inefficient and inhuman" (Watson, 1994). In addition to the heritage of apartheid planning, Watson (1994) also attributes the failure of cities to pre-apartheid planning ideology. The spatial symbols of apartheid including the townships, the new towns, the separate, cellular suburbs and the buffer zones are frequently based on planning concepts imported from Britain and the United States of America. In order to increase efficiency during the post-apartheid era, planning theories and practices themselves need to be evaluated and possibly changed. This thesis will argue here that one way of attaining increased efficiency in urban areas is to incorporate environmental considerations into planning practice.

1.3.1.1 Sprawl

South African cities are currently growing outwards in an almost random, unmanaged way, resulting in low-density sprawl that is increasingly impinging on the rural hinterland. The formal residential areas (both low and middle/upper-income) have been built at relatively low densities due to the application of urban management practices which "entrenched anti-city values of suburbia which promote the single-storey house on a large plot as the image of 'good' urban living" (Dewar, 1992b:244). Furthermore, within many areas, large quantities of space have been allocated to uses other than residential; such as roads, open space and community facilities (Watson, 1994).

This model of urban development favours private transport and the car owning public, and marginalises the poor from city activities. Concerns about the free flow of traffic outweigh all other design considerations (Dewar, 1992b). As a result, the bulk of expenditure on movement infrastructure has been directed into roads as opposed to forms of public transport (Watson, 1994). Where attempts have been made to supply public transport, this is made very difficult and expensive by the low density and fragmented spatial form of the city.

The lateral spread of the city has been caused by different forces operating in various sectors of the housing market, which ultimately have similar consequences. Higher income people seek to privatise amenities and rural ambience, resulting in increased growth on the city edge. This form of development results ultimately in the destruction of the very environmental attributes that were sought after in the first instance. The search for cheap land by authorities for large scale low-income housing development has inevitably also been found on the city edge. The main factors informing the choice of land historically has been ease of acquisition and a desire for racial separation. A further process promoting sprawl is the process of illegal squatting by people who either cannot find a place in legally designated housing areas, or who seek locations closer to their places of work. Public, private and informal development trends have therefore all directed growth outwards, resulting in substantial urban sprawl.

1.3.1.2 Fragmentation

Development tends to occur in discrete pockets or cells that are frequently separated from one another by freeways or buffers of open space, resulting in a coarse, fragmented city structure. The planning principle promoting the "neighbourhood unit" or "urban village", in which

> "housing areas focus inwards on community facilities embedded at their geographical centres, in terms of more formal housing developments; on discrete, consolidated sites; and the dominant locational need to avoid harassment in the case of squatter settlements"

has been identified as the primary reason for this fragmentation (Dewar, 1992b:244). This fragmentation facilitated the separation of race groups in the apartheid city. The Group

Areas Act created self-contained "neighbourhood units" that made it unnecessary for people to leave their designated race group areas.

These pockets of development operate in relative isolation and are linked primarily by freeways and other limited forms of movement, which bring few benefits in an urban structural sense (Dewar, 1992b). The newer parts of the city are scaled to the motor car and not to the requirements of people on foot. The distances between separated urban events are very large, resulting in low levels of integration. This spatial form serves to disadvantage the urban poor most severely, as they are precluded from activities that require transport.

1.3.1.3 Separation

In the South African city, land uses, urban elements, races and income groups are all separated to the greatest degree possible. Urban planning has promoted a separation between places of work and residence with the result that land use patterns are largely mono-functional. Under apartheid, most new growth occurred amongst the poor, who were displaced to the urban periphery. There was a limited filtration through the housing stock, resulting in increasing numbers of poor people living on the edges, further and further away from urban opportunities (Dewar, 1992b).

Cities are growing primarily through the rapid expansion of largely mono-functional housing areas. According to Dewar (1992b:245), with housing for lower income communities, the prevailing suburban philosophy translates into a housing estate mentality:

> "the emphasis is still upon the single-storey house in the single plot, but the plots are far smaller. Structurally, these housing estates reflect the conventional planning wisdoms which were imported from Europe and the United States of America: introverted neighbourhood units; the superblock; arithmetically organised community facilities; and everything scaled to the car."

Industrialised mass housing schemes that were planned down to the last detail have now been replaced by mass site-and-service schemes, which are also fully planned, but differ in that they only incorporate essential social services such as schools and clinics. "In essence, these are almost precisely the same as the older mass housing schemes: there is simply less house." (Dewar, 1992b:245).

Edwards (1995) makes an important observation with regards to a further consequence of mass housing for low income people in South Africa. He notes that the housing estates to which low income people were removed during the 1960s resulted in a restructuring of households. In Cato Manor, for example, most of the black population lived in shacklands, with dense social networks. Many of the households were headed by women. The mass housing schemes of KwaMashu and Umlazi, to which these people were moved, did not allow for women to own or rent property, and hence created male dominated household structures. In addition to the spatial consequences of mass housing schemes, the social consequences have also been significant.

Separation based on race has resulted in a duplication of land uses such as open spaces for active and passive recreation, whereby different "race group areas" adjacent to one another are served with the same recreational facilities. This duplication increases the cost of servicing a spatially desegregated, compartmentalised urban structure, as well as the need for transport subsidies (Bernstein and McCarthy, 1990). Open spaces play an important role in facilitating social networking, but, low income mass housing schemes are often inadequately served with open spaces, and people hence have to travel long distances for recreation. As an alternative, streets have become the site of social interaction and networking. Streets have increasingly, and necessarily become important social symbols in low income communities, but do not constitute safe spaces for children to play in.

1.3.2 Social, economic and environmental impacts of these patterns of urban growth

The consequences of these spatial characteristics for the majority of urban dwellers - the urban poor - have been severe. The low density, sprawling, fragmented and mono-functional nature of urban areas impose major costs on both society and individuals. Low density sprawl increases the capital operational and maintenance costs of the development process. Large-scale investments in infrastructure serve to benefit relatively few users. The one house per plot form of development increases infrastructure length. Where large-scale developments are located on or beyond the city edge this has often also required new investment in bulk services (Watson, 1994).

The consequent spatial form of the city affects economic productivity and efficiency. Excessive commuting time effects productivity, as workers are often tired and late. The large distances result in distribution costs forming an inordinately high proportion of the total cost. Furthermore, the system is not conducive to the promotion of informal sector activities as "thresholds are dispersed and there are few good locations where consumer concentration occurs" (Watson, 1994). The growth of black entrepreneurs has been further restricted by the enforced residential locations of black informal sector traders, product distribution inefficiencies, and "costs of entry" problems (Bernstein and McCarthy, 1991).

Land use mismatches through rigid sectoral structuring of land uses has resulted in people having to travel large distances. This is especially true for the poor, who have been precluded from central residential options. However, this has not been compensated for by a viable, efficient and widely accessible public transportation system. The personal cost incurred by people from remote residential areas to places of work both in terms of time and money, are becoming increasingly unjustifiable. Millions of rands are spent annually on transport subsidies, which could be considerably reduced by a different physical form and organisation of land-uses (Watson, 1994). This structural system serves to aggravate significantly the major development issues of poverty, unemployment and inequality. "It is economically inefficient, inflationary, and mitigates against economic growth" (Dewar, 1992b:245). The large distances also result in the generation of large quantities of motor vehicle air pollution, which is dangerous to the health of people and which the natural environment is unable to absorb.

The form of development exhibited by cities fails to generate high levels of social and commercial services. It wastes society's scarce resources such as land, energy and finance (Dewar, 1992b). Large parcels of disused land are located in or close to central areas, which might otherwise have been released decades ago as part of the development of efficient and compact urban growth (Bernstein and McCarthy, 1990). A good example of such a parcel of land is Cato Manor. These areas of undeveloped and undesignated land are often neglected and serve as dumping grounds, or sites for squatting. This disturbance results in indigenous vegetation being overrun by alien vegetation, decreasing the ecological as well as the development potential of the land. In addition, cities bear major

environmental costs as large areas of agricultural land on urban peripheries have been lost to urban development.

As a result of their location and urban form, Dewar (1992b) adds that the potential of the housing process to generate economic development and achieve a wider circulation of income via inward industrialisation is not being realised. Dormitory housing areas have traditionally constituted desperately poor living environments. Due to their marginal nature, they have to be entirely self-sufficient in terms of social and economic infrastructure, and they are inconvenient for the majority who are without cars. Access to public facilities such as libraries, health care facilities and other support services important to the self-improvement of the poor are inaccessible. For many in these areas, the average day is dominated by survival activities such as the search for fuel and water and desperate attempts to generate a meagre income (Dewar, 1992b), leaving little time for personal and societal development.

Because of the high degree of planning and control, these settlements are inevitably sterile, monotonous and boring. There has been no tradition of making positive urban spaces. Public spaces are typically poorly integrated into the urban fabric and are hence inhospitable, dangerous and frequently serve as dumping grounds for rubbish. However, since the early 1990s, the concept of communal "Peace Gardens" within townships has gained popularity. South Africans are discovering the uses and pleasures of gardening as a means of supplementing subsistence bases (Johns, 1992/3), as well as softening the harsh urban fabric.

It is clear that urban areas are under stress, and face the threat of fiscal and environmental collapse if management practices are not reviewed and restructured in order to promote positive urbanisation. "A new management philosophy, based on the realities of context, is required if significant and accelerating improvements to the living conditions of the urban majority are to be achieved over time." (Dewar, 1992b:246).

1.3.3 Towards the restructuring of urban areas

1.3.3.1 The need for an appropriate philosophy

In order to tackle the urban problem, it is essential that the principles upon which city building have traditionally been based be rethought. Dewar (1992b) suggests that this re-examination should begin with the reasons why people come to cities in the first place. In terms of prevailing urban planning philosophy, the central urban issue is housing. However, in reality people do not come to cities just for housing, they come to the city in order to experience the economic, social, cultural and recreational opportunities and facilities that cities offer. The more a city generates economic and commercial facilities, and serves the needs of the people, the better it ranks in development terms. However, South African cities are characterised by increasing levels of poverty and unemployment. There is therefore a need to generate opportunities for small-scale, self-generated and often informal economic activity. As we have seen, the ability of a city to generate such opportunities is profoundly affected by its spatial form and structure (Dewar, 1992b).

The second central principle that Dewar (1992b) highlights is that of equitable and easy access to urban activities. Clearly, the fragmented, sprawling structure of South African cities coupled with the high costs and unreliable public transport system precludes a number of people from the benefits that cities have to offer. In addition, land use is mono-functional, forcing people to undergo huge spatial displacements on a daily basis. Dewar (1992b) identifies the generation of qualities of "city" as opposed to those of suburbia as being a central management task in city planning.

Positive urban environments are dense, complex and richly mixed in terms of uses. Convenience is maximised when compatible activities reinforce one another. Promoting complexity therefore, should be amongst planning priorities. However, Dewar (1992b) argues that complexity cannot be planned as it results from freedom of action. He therefore suggests that an appropriate management plan should aim to allow for opportunities to be created for individuals to exercise their ingenuity to furthering their own self interests. Land use zoning should accordingly allow for mixed uses, which will serve to break down mono-functional landscapes, and promote complexity.

Dewar (1992b) also emphasises that whilst the importance of generating qualities of urbanity are important, it is equally crucial that the relationship between built and unbuilt environments is maintained. Unbuilt areas or open spaces serve to soften the harshness of the built landscape. In addition, open spaces serve to decrease the environmental impacts of urbanisation by decreasing the urban heat island, acting to reduce peak flows associated with storm water runoff and absorbing pollution.

1.3.3.2 Restructuring strategies

In order to apply an alternative planning philosophy which aims to restructure South African cities to create more positive urban environments, Dewar (1992b) suggests the following actions be incorporated into urban management practices.

a) Establish and maintain the relationship between non-urban and urban land

There is a need to maintain a fixed edge between urban, agricultural and rural pristine land, as contact with natural landscapes provides opportunities for necessary escape from the pressures of urban living, and represents a recreation opportunity for urban dwellers. This argument is also expressed by Dewar and Uytenbogaart (1991), and accords with McHarg's (1969) *"Design with Nature"* philosophy in that it envisages a clear distinction between natural and urban landscapes. However, restricting natural areas to the periphery of cities results in natural amenity becoming a privilege that only those with access to transport can enjoy. A class bias therefore exists within this planning principle. This proposal also serves to entrench the dualism between the natural and built environment. It is argued that this dualism is at the root of the environmental crisis suffered by cities.

Dewar also lays considerable stress on green areas within the city. These green spaces are very much like the grand gardens and avenues found in many European cities. Much of the imagery of planning these parks has invoked the idea of bringing the countryside into the city (Kivell, 1993). However, it is argued here that although these spaces do allow nature to be a part of the city - it is still a dualistic construct - as these parks are carefully manicured, often with exotic species, which can be considered "ecological" or "green deserts". In contrast, Roberts (1990), in proposing a metropolitan open space system for Durban, advocates an alternative view which envisages the "naturalisation of city

landscapes". In this view the city itself has the potential to become a viable ecological resource, providing habitats for a range of species and natural communities. The concept of contact with the natural environment is not a new one. Indeed, almost all cities have historically been planned with defined areas of "open space". However, these are often poorly managed or ill planned, resulting in these spaces becoming unsightly, unpleasant and often harbouring criminal elements.

There are also important economic reasons for maintaining a link between urban and rural areas. According to Dewar (1992b), a stable relationship between a dense local urban market and agricultural land stimulates intensive small-scale agricultural activity. On the other hand, a sprawling, ever-moving urban edge ensures that only very large producers can serve the urban population through centralised distribution points. This kind of activity should not be confined to the periphery of urban areas, but should be encouraged on land within the urban fabric as well. The promotion of small-scale agricultural activity within the urban confines will serve to further the "naturalisation of city landscapes" proposed by Roberts (1990).

b) The need to compact the city

There is an urgent need to reduce dramatically the lateral spread of cities by imploding as much growth as possible onto un- or under-utilised land. This can be done by increasing dwelling densities. However, this option must be treated with much sensitivity within the South African scenario. Higher density environments have traditionally been associated with the low-income housing estates that were established during the apartheid removals, and are hence viewed with much suspicion and resistance.

There is growing consensus that higher density development on infill sites is essential. It has been argued that low density development is inefficient, wasteful and imposes major costs on low income people (Hindson *et al*, 1992). Dewar (1992) states that densities need to be much higher for the following reasons:

* higher densities allow efficient and cheaper public transport systems to be provided;
* levels of social and commercial services can be much higher;

* concentrations of people support the growth of the informal sector; and
* unit costs of housing, social and other services are lower.

Dewar (1992) qualifies this position by adding that the promotion of higher densities does not imply high-rise, he instead proposes that walk-ups be the norm. Also, high density does not mean overcrowding; densification should be used as a strategy to reduce unit overcrowding. Finally, high density does not mean a lack of access to nature; access to open space can be better achieved than in low density suburbia.

The "cities-within-cities" urban planning concept has been used to promote compaction. This concept was introduced by Currie (1978) whereby growth is accommodated in a "cluster of compact, walkable, planned communities of sufficient size to be true cities (say 400 000 to 500 000 in developing countries)". These communities are to be fully serviced in terms of urban functioning. New growth should be strategically and sensitively imploded within the boundaries of existing cities, to prevent the urban edge from being pushed out further and further. New growth should be viewed as an opportunity to improve the potential and quality of existing areas. The cities-within-cities approach could be implemented in Cato Manor, where a huge gap has been inserted into the metropolitan fabric as a result of Group Areas removals (Bernstein and McCarthy, 1990).

If successfully implemented, "cities-within-cities" will reduce commuting substantially, which has important implications for the urban poor. A compact city can contribute towards alleviating the emphasis on the motor car, as activities will be more accessible. In addition, a less sprawling city structure will make public transport networks more viable.

A more compacted city form has economic benefits as it will serve to compact the local market, offering a greater range and diversity of potential economic opportunities (including small economic enterprises) to all inhabitants. The access and equity of social and commercial services are much higher in more compact systems. Indeed, Smit and Todes (1987) note that the compact city form allows the urban poor access to collective consumption and employment opportunities locally, and in addition, they also have access to the entire metropolitan area. Smit and Todes (1987) conclude that a "cities-within-cities" approach will contribute positively to any project aimed at improving the quality of life of

the urban poor. This in turn will serve to positively influence the overall sustainability of the city.

The compact city approach has received strong support from the environmental lobby internationally (Briggs, 1994). It is seen as being more energy efficient, and as providing an urban form which facilitates the best balance in terms of environmental inputs and outputs (Briggs, 1994). However, the argument that a compact urban form is the most sustainable has not gone unchallenged. Some researchers doubt the superiority of the compact city on energy consumption grounds, arguing that decentralisation of jobs and houses has reduced journey lengths and that congestion in urban areas offsets any gains resulting from shorter journeys (Breheny and Rookwood, 1993). Roberts (pers comm, 22.09.1994) argues that compaction serves to increase local pollution. Compaction should therefore be accompanied with a stringent pollution and waste management strategy. An open space system will also go a long way in alleviating a concentrated urban heat island and will also serve to absorb and hence reduce air pollution.

c) Integrate the city

Central to the efficient and equitable performance of urban areas is the degree to which the activities within the city are integrated. A fragmented city, without sophisticated infrastructure and communication networks, is typically inefficient, whereas an integrated city can create more opportunities for economic and social upliftment to which people can respond.

South African cities have been described above as being largely fragmented into mono-functional areas. Focus should therefore be on tying local areas together, designing these as spatial systems that can accommodate a range of activities. Dewar *et al* (1978) introduced the concept of mixed use activity corridors as a strategy to promote this integration as well as a more decentralised pattern of commercial and small-scale industrial activity. The emphasis is upon promoting the growth of mixed usage corridors between the disparate parts of our cities - "corridors that would act as seams, tying together these disparate parts" (Bernstein and McCarthy, 1990). Over time, these actions will increase

accessibility by reducing enforced movement (Dewar, 1992b), which will in turn result in a far more energy-efficient city and in decreased atmospheric pollution.

d) Redefine essential infrastructure

With the provision of low-income housing, the urban infrastructure that is provided is restricted to utility services, including housing and "essential" social services such as schools and clinics (Dewar, 1992b). This limited provision of infrastructure implies that South African cities do not accommodate the poor in a holistic and facilitating way, thereby restricting self improvement.

Areas of natural environment are regarded as "non-essential infrastructure" in areas planned for low income communities, where open space provision is in the form of sportsfields and playlots. The natural environment can be used in a more multi-functional and imaginative manner, as a source of renewable resources for the poor to use in order to meet their basic needs. Small-scale agriculture can contribute towards the subsistence of poorer communities. Large-scale planting programmes, including the creation of woodlots, can provide a number of benefits to low income communities. In addition to improving the environment by reducing deforestation, they can serve as protection from the wind, create supplementary sources of energy and building materials, establish evapotranspiration traps for grey water generated by low-cost, water-efficient sewerage systems, and to establish places of escape and recreation (Dewar, 1992b). On a smaller scale, urban agriculture and market gardening can contribute towards meeting the subsistence requirements of low income communities.

Urban public spaces, if positively planned and managed, can form the primary social infrastructure of successful urban environments. The role of open spaces in low-income communities is heightened by the fact that the full range of a family's needs cannot be met through the individual dwelling unit. Open spaces can serve as extensions of the individual dwelling unit. In addition, Dewar (1992b) notes that when public spaces are rich social spaces, the entire environment is positive, regardless of the quality of the individual buildings.

A further element of essential urban infrastructure that needs to be incorporated into cities is the public provision of economic infrastructure which allows people to engage in small-scale trade and manufacture with low overheads. Informal trading and street markets should be encouraged by the removal of unnecessary restrictions. Access to credit for informal activities should also be facilitated.

There needs to be improved access to information and communication, especially for those who are newly urbanised. The city can be an exceptionally alienating and hostile space, and can be made less daunting with better access to information. This can be done through the creation of accessible public spaces and other places of gathering which are conducive to the dissemination of information. Information can also be disseminated through the channels of traditional mass media.

Finally, transforming the mono-functional land-use patterns that are exhibited by South African cities into multi-functional arrangements will serve to enhance the quality of life of urban dwellers (especially the poor), hence contributing towards the sustainability of the city. The spatial and temporal budgets of urban environments need to be re-examined to maximise the environmental, economic and social performance of cities. Facilities such as schools should not be viewed as having only a diurnal function; classrooms can be used at night for various meetings, and sportsfields used by clubs outside school hours.

e) Stimulate complexity of goods and service delivery

The process of housing delivery is massively oversimplified, with emphasis placed upon select forms of building delivery in the production of environments. Low income housing has traditionally been through highly centralised, high-technology mass housing systems (Dewar, 1992b). In 1983, there was a change to self-help schemes. However, the issue has little to do with the technologies of housing provision, but rather the process of urban development. There is a need for a more complex process, involving a wide range of agents, individuals, community groups, small developers, local authorities, utility companies and employer agencies to enter the delivery process (Dewar, 1992b). This will serve to break down the highly centralised delivery system that was typical during the apartheid era. A multitude of delivery systems will result in the creation of diverse opportunities and

landscapes, as opposed to the sterile environments produced by the state. Furthermore, a more complex system will ensure that capital invested in the construction process circulates as widely as possible, and particularly that it reaches the poorer sections of society. However, there is the danger that without efficient co-ordination and co-operation between different delivery systems, a complex delivery system could serve to hamper development, as the case of Cato Manor will illustrate.

1.3.4 Conclusion

Owens (1994) raises a number of other potential dilemmas that could arise when reconciling the need to plan for attractive urban environments while at the same time reducing the wider impacts of urban development. There is a degree of consensus that the environmental impacts of transport and the conversion of rural to urban land could be minimised, and energy efficiency in the built environment maximised by relatively compact patterns of urban development. This may imply higher urban densities, which may be met with resistance, as it may be interpreted to mean less green space and lower standards of visual and other amenities.

The concern that compaction will result in increased densities and a decrease in green spaces can be mitigated by a number of factors as highlighted by Owens (1994). First, there are often extensive areas of derelict land within cities, which can be developed upon, whilst maintaining other ecological open spaces. Making use of such land within cities would permit more development and enhance internal environmental quality. Secondly, large areas of land within cities are required to support their car-based transport systems; a large land use/transport system less dependent on the private car could release land for development and/or open spaces. Thirdly, it is not beyond human ingenuity to design urban areas which are environmentally sustainable and attractive; but there is need for vision, and for the powers and the frameworks provided by urban and environmental policies at national and regional level.

South African cities display a form of urban development that is highly distorted and divided. These features present a huge challenge to planners, but there are also major opportunities for physical restructuring and regeneration. The spaces left by the patterns

of fragmentation and separation also provide the spaces in which new forms of development can occur. What is essential in the restructuring and regeneration of the cities is a new system of urban planning and to promote positive economic, social and environmental opportunities.

1.4 INTEGRATING URBAN PLANNING AND THE ENVIRONMENT

Dewar and Uytenbogaart (1991) in their book *"South African Cities: A manifesto for change"* reinforce the fact that appropriate urban planning has a philosophical basis in planning consciousness. They suggest that for cities to be successful, two essential foci are required: a prioritisation of the needs of both people and the environment.

Within the humanist framework, the assumption is that urban planning is concerned with the making of human settlements. This process is influenced and shaped by two factors: rapid population growth and rapid urbanisation. Planning is ultimately for people, and the built environments that are a result of that planning outlive any one generation of users. Dewar and Uytenbogaart (1991), therefore suggest that planning should not

> "represent the sectional interests of any individual, group, class or political ideology...(T)hey are not dependent upon technological pre-conditions to perform successfully, and they accommodate ideological and political transitions. They are not based upon ephemeral conditions, but are rooted in a basic understanding of human activity and need."

Urban environments should therefore strive to contain qualities that are timeless in order to ensure the creation of enabling environments.

The second factor that should underpin planning consciousness, as identified by Dewar and Uytenbogaart (1991), relates to the resource base upon which human life is dependent. Dewar and Uytenbogaart (1991) describe this consciousness as a "conservation ethic". The word "conservation" as used here is beyond preservation, and evokes three central themes. The first is to balance human activities and the resource base by means of which those activities take place (ie. to use the resource base sustainably). The second is to recognise the interdependence between the characteristics of a place, people's activities in that place, and the emergence of cultural expressions and forms. And finally, the importance of all resources and the necessity to utilise these wisely needs to be acknowledged.

Dewar (1992b) implicitly advocates in his restructuring strategies (as described above), that environmental considerations need to be taken into account in order to create more positive urban environments. This is made more explicit above by Dewar and Uytenbogaart (1991) when highlighting what they consider to be an appropriate philosophical basis for the reconstruction of South African cities. They aim to create more positive urban environments which are dense, complex and richly mixed in terms of uses. However, the strategies put forward by Dewar (1992b) and Dewar and Uytenbogaart (1991), have been criticised here, as they do not always serve the interests of the environment, as they are often reductionistic and dualistic. Nonetheless, the philosophical basis as well as the aims that they strive to achieve are compatible with the planning concept of sustainable development, which will be explored in chapters two and three.

1.5 DURBAN: THE CITY AND THE ENVIRONMENT

The Durban Functional Region (DFR) is the major metropolitan area of KwaZulu-Natal. The fragmentation of authority that existed during the apartheid era was characterised by a lack of commitment to metropolitan-wide urban planning that resulted in the formation of informal settlements. These brought a range of social and environmental consequences. The natural environment has been subject to denudation of vegetation, increasing erosion and siltation of rivers as well as high levels of pollution due to a lack of adequate infrastructure provision. The dissected topography and high rainfall experienced by the region serves to further aggravate the degradation of the natural environment. However, more significantly, the dense population of the region places a huge strain on the environment. Although the DFR comprises only 4% of the land area of the province, it contains about 55% of the population (Wulfsohn and Walton, 1991). Durban is failing to meet the needs of its people as there is insufficient land, inadequate housing and services, resulting in numerous shack settlements being erected both on the borders as well as within the metropolitan region.

As the former KwaZulu "homeland" areas were so close to the boundaries of the metropolitan region (Figure 2), they became fully integrated into it during the apartheid era. This allowed large numbers of migrants to move into the city, even before the group areas act was repealed (Wulfsohn and Walton, 1991). Large informal settlements sprang up,

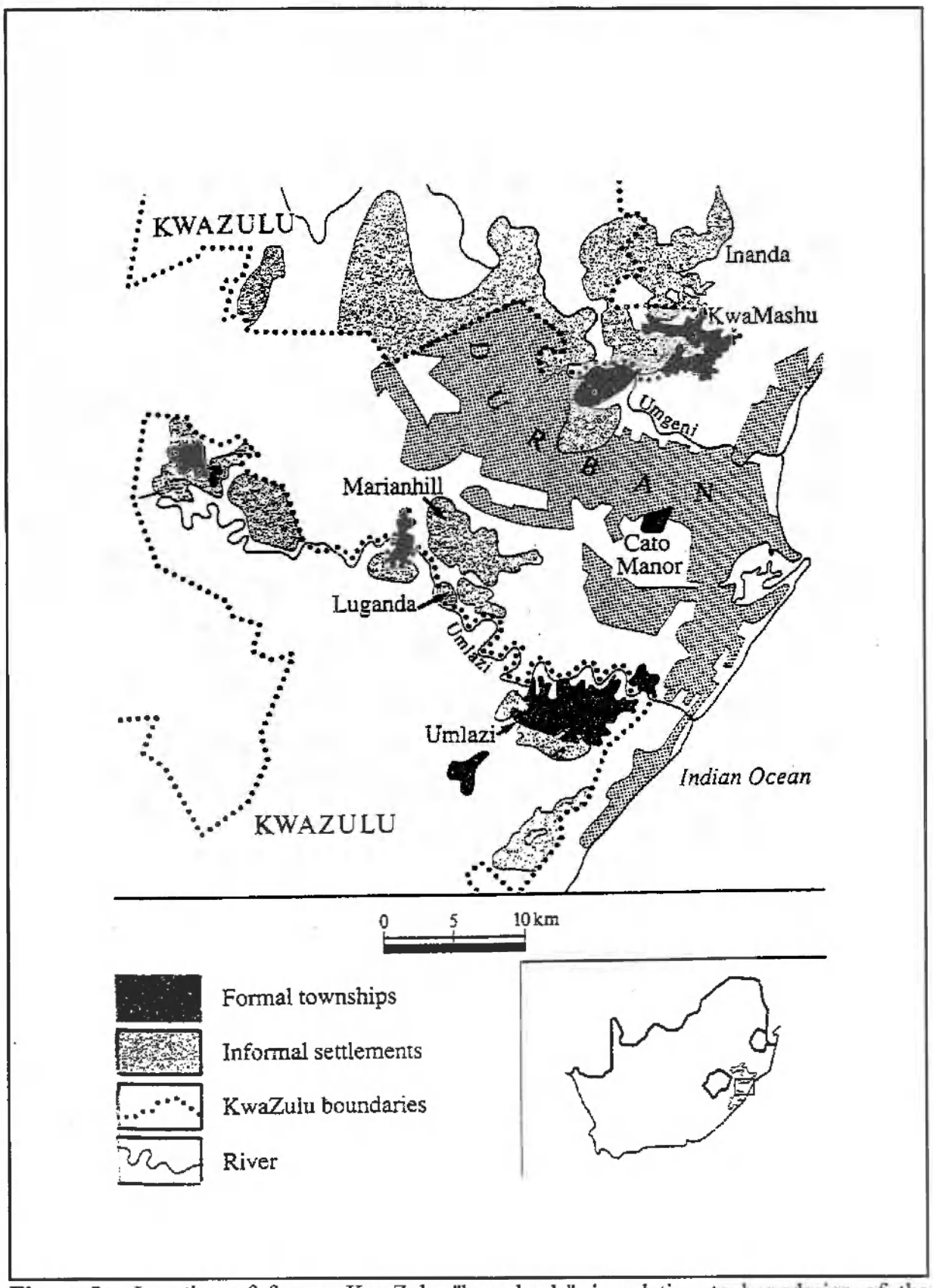


Figure 2: Location of former KwaZulu "homelands" in relation to boundaries of the Durban Metropolitan Region. (Source, Wulfsohn and Walton, 1991)

resulting in environmental degradation.

Local government has been ineffectual in responding to the pressures of urbanisation. Durban's inability to respond is compounded by the fragmentation of administration created during the apartheid era. Until the advent of democracy in April 1994, 68 disparate local authorities governed the Greater Durban Metropolitan Area. Planning authorities pursued their goals in relative isolation. Dewar and Uytenbogaart (1991) note that the high degree of control exercised by the local authorities within the urban environment, stifles expressions of creativity. The fragmented approach to urban planning has left the city incapable of responding effectively to the rapid urbanisation generated by the repeal of Apartheid legislation.

1.5.1 History and development of informal settlements

The city of Durban was developed in a segregated manner in the mid-nineteenth century by the British colonial government. However, the spatial form of the city only became starkly defined in 1948, when the Nationalist government came into power, and the system of apartheid began to make an impact on city form (Davies, 1976).

Africans were moved from areas within the city to formal townships on the periphery of the city. Cato Manor was one such area from which Africans were moved to KwaMashu and Umlazi. Although these removals were carried out on the pretext that these areas were a health hazard, Wulfsohn and Walton (1991:105) note that not only did they "move the sanitation and other environmental problems away from white settlements, they also put high-value land into white hands." The implicit strategy was hence to the benefit of the white economy. The rest of Durban was divided into Group Areas for the white, Indian and Coloured population groups. After the state-led mass-housing campaign of the 1960s, no more housing was to be provided for Africans in Durban. By the 1970s, the state had its "homelands" policy in place, and from then on, it only encouraged township development in specified growth points in the homelands.

Although legislation did not permit further African settlement in the DFR, informal settlements sprang up as rates of urban migration increased. Migration, along with natural

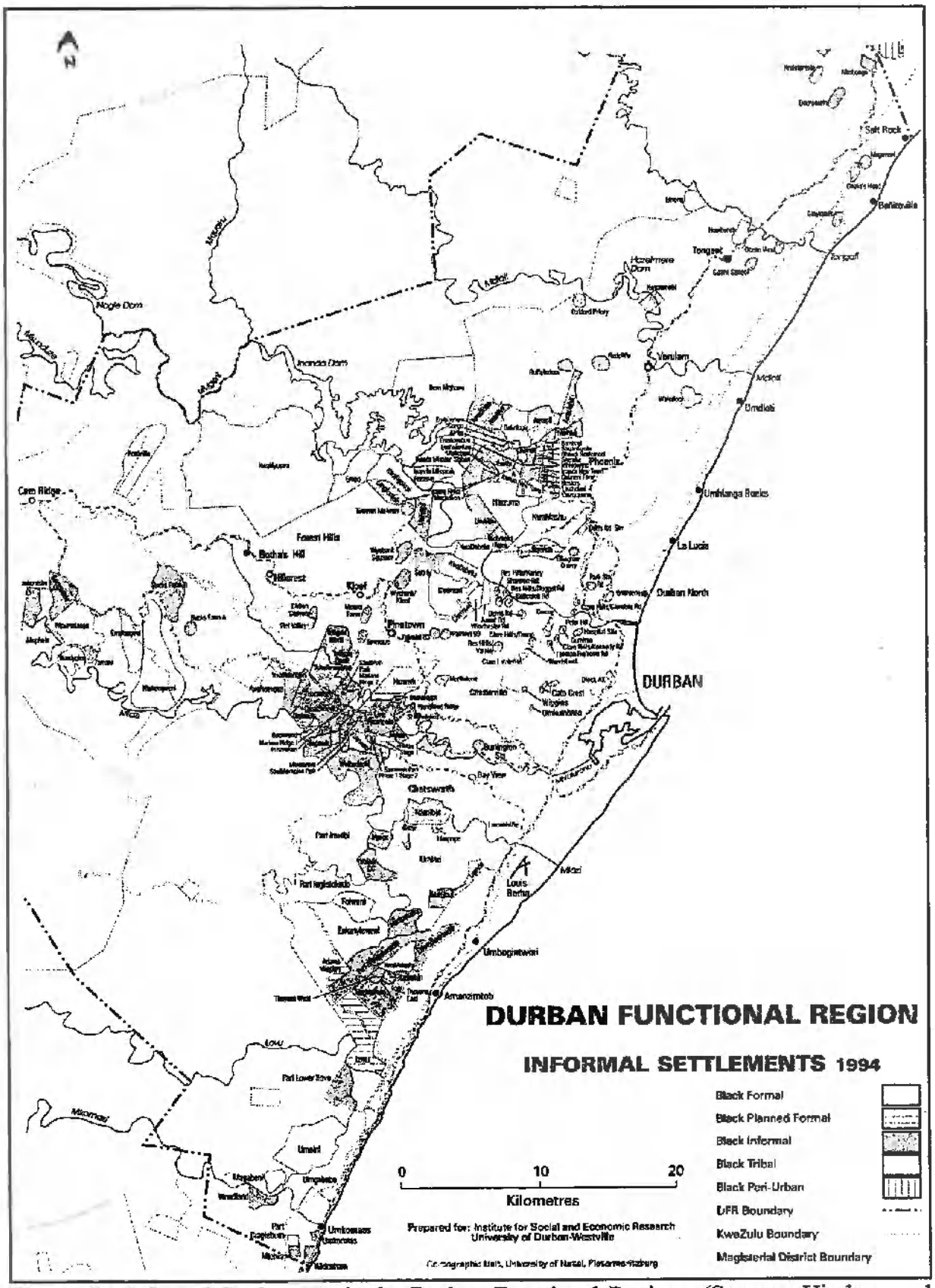


Figure 3: Informal Settlements in the Durban Functional Region. (Source: Hindson and McCarthy, 1994).

population increases led to a rapid increase in informal settlements during the 1970s, continuing into the 1980s. According to Wulfson and Walton (1991), there were estimated to be 1.8 million people living in informal areas in Durban in the early 1990s, which translates to 60% of the estimated metropolitan population (Figure 3). This figure continues to rise at an unprecedented rate.

Masterplans for Durban in the early 1990's were still reinforcing the segregated urban sprawl that typified the apartheid city. Little attention was given to the delivery of low-income housing within the city. Informal settlements on the periphery of the city hence proliferated. Low-cost housing delivery has been a seriously neglected concern, since the supply of houses and services is in the hands of the private sector whose main concern is short-term profit (Wulfsohn and Walton, 1991). The lack of provision of well-located, appropriately serviced and affordable housing has resulted in the people in shack settlements using the environment unsustainably. The practice of "shack farming" has resulted in very high densities of shacks which has necessitated the removal of vast areas of natural vegetation. A lack of service and infrastructure provision results in wood being used for fuel, increasing levels of indoor and outdoor air pollution. However, inspite of thepressures placed on the vegetation as a result of increasing squatter settlements, it is interesting to note that a comparison between the density of vegetation in low income formal housing and squatter settlements (eg. Cato Crest and Bonella in Cato Manor). There is significanlty more vegetation in the squatter settlements. This suggests that while "hard service upgrading" may have some social benefits in the medium term, there is by no means sufficient wisdom and humility in our engineering professions to justify confidence in their ability to identify, let alone promote, environmentally desirable developments in settlements (Quinlain and McCarthy, 1994).

1.5.2 The environmental impact of informal settlements

The occupation of vacant land by squatters in Durban has had deleterious consequences for the natural environment. Prime agricultural land close to the city has been degraded by "shack farming". The high densities at which shack farming occurs result in this practice being unsustainable, as agricultural productivity is difficult to restore after extensive soil erosion.

Informal settlements normally gravitate towards river valleys, because of the need for water. This results in pollution of the river catchments. In addition, an assessment of environmental quality in Durban rated flooding as the most significant natural hazard in terms of lives lost and damage caused (Wulfsohn and Walton, 1991). Storm water management is lacking, and the removal of vegetation on the steep slopes further increases the flow of water and consequent flooding.

Informal settlements are also often located on unstable slopes, and landslides are common after heavy rains. Linked to increased runoff and flooding, is an increase in rates of soil erosion. Much erosion occurs during the initial phases of development construction, when large tracts of land are cleared of vegetation, as is illustrated in the case of Cato Manor.

1.5.3 Case Study: Cato Manor

The achievement of a positive urban environment in Cato Manor that embraces principles of equity and sustainability, and maintains a healthy balance between environmental and development priorities for Cato Manor (and future development of this nature in South Africa), presents a great challenge to urban planners. This is especially so in the light of rising concern about the restructuring of South African cities, to rid them of the inefficient spatial form that the apartheid legacy imposed upon them.

It is clear that the crisis in South African urban areas is deeply rooted in the political and economic folly of separate development. However, the legacy of apartheid will remain long after the legal system is dismantled. As many authors have pointed out, the formal demise of apartheid - the removal of the "scaffolding", as Francis Wilson (1989) puts it - leaves the structures largely intact. The development of Cato Manor also represents a broader process of political and socio-economic change that is currently unfolding in South Africa. It is clear that the development initiatives for this area will be seen as a possible model for major inner city development projects in the post-apartheid South Africa. It is therefore imperative that the planning process is as holistic and synthetic as possible. The environmental and social feasibility of a development of the scale and complexity in respect to land use envisaged for Cato Manor, depends largely upon a planning approach that

differs from the traditional, conservative and top-down apartheid style planning that has shaped South African cities.

This thesis suggests that the development of a sustainable development framework has the potential to offer constructive insights for future urban restructuring in South Africa. It therefore attempts to critically analyse the planning and development initiatives for Cato Manor with an emphasis on environmental considerations and the possibilities for sustainable development, providing a basis for evaluating their strengths and weaknesses. In doing this, it is hoped that the need for the development of a policy framework and implementation strategies for future developments of this kind will be highlighted.

1.6 CONCLUSION

The conservation, or environmental ethic identified by Dewar and Uytenbogaart (1991) has been lacking from the urban planning process, and has contributed towards the crisis of urban form in South Africa. The call for a re-structuring of cities made by Dewar is a vital one. It is clear that South African cities are unsustainable, and do not serve the interests of the urban poor. In addition, Dewar and Uytenbogaart's (1991) recognition of the need to include environmental issues into planning are essential for moving towards a more sustainable urban form. However, it is argued that the restructuring strategies proposed by Dewar are not sufficiently far reaching, nor are they appropriate for long term sustainability. The strategies are dualistic, perpetuating a separation between the built and unbuilt environment. This dualism, it is argued, serves to perpetuate an unsustainable urban form, as it does not challenge the philosophical foundations upon which planning has been based.

It can be argued that one of the primary reasons why planning in has suffered from environmental blindness is the strong role that scientific and positivist approaches have played in the planning and management of urban systems. Although planning internationally (particularly in First World countries) have made considerable progress in shifting away from these positivist approaches, urban planning in South Africa has been largely environmentally blind. The next chapter is a philosophical exploration of the ways in which prevailing attitudes to nature as shaped by scientific thinking have resulted in the marginalisation of environmental considerations in urban planning.

Chapter 2

THE CHANGING ROLE OF SCIENCE: IMPLICATIONS FOR THE ENVIRONMENT

2.1 INTRODUCTION

For many people in South Africa (and indeed the rest of the world), "the environment" has typically been associated with untouched natural areas. As humanity is largely responsible for environmental degradation, many have presumed that environmental issues and people should be kept separate (Ballard, 1994:2). Associated with this dichotomy have been different approaches used to manage people and the environment. Typically, "conservation" has suggested a maintenance of the status quo of the environment, while "development" has implied change and progress in society (Ballard, 1994:2).

Within South Africa, the approach to environmental issues has historically been fragmented and conservative, reflecting the interests of the privileged minority white sector of South African society (Ramphele, 1991). The thrust of environmental action in South Africa has been concerned with establishing and maintaining conservation areas, thereby preserving representative samples of plant and animal life in pristine rural areas. Little attention has been paid to the environmental problems of low income communities which fall under the rubric of the "brown agenda". This has alienated much of the black community from environmental concerns (Ramphele, 1991), and many people have come to consider environmental issues as racist endeavours with a rural bias serving particular class interests. However, this old view of the environment is giving way to an understanding which includes the majority of South Africans. McDonald (1994) summarises this shift in perception as follows:

> "The traditional 'big five' of ecotourism - lion, leopard, elephant, rhino and buffalo - will be joined by the new 'big five' of the South African environment: housing, electricity, water, sewerage and refuse removal."

The move towards the reunion of people and the environment has been illustrated by certain trends in international thinking. The World Conservation Strategy (IUCN, 1980) offered a strategy characterised by an integrated approach to conservation and development. The accommodation of both interests in the same process has emerged with principles like

"sustainable development" becoming the guiding force (Ballard, 1994). This trend has steadily gained momentum, and a more people-centred, participatory approach to the environment is now evident in South Africa (Ramphele, 1991).

Although the concept of integrating concern for the environment and people is still new in South Africa, it has reached us at a timely stage of the country's political history. People's needs under the Government of National Unity are being dealt with in a significantly different way when compared to the approaches adopted by the previous government. The Reconstruction and Development Programme (RDP) identifies "the environment" as a basic need for the people of South Africa. This marks a commitment to the improvement in the quality of life of those who have been denied this attention until now.

It has become clear that the way in which the environment has been defined, planned for and managed through time is a product of the way in which society perceives it at that point in time, which is a product of the attitudes that preceded that of the prevailing position. Pepper (1984:47) confirms this with his observation that

> "what we do about nature and ecology is not a function of what is 'out there', but of how we perceive it, and our perception is a function of our cultural filter and the assumptions in it."

This chapter therefore attempts to establish a theoretical framework for understanding the ideologies underpinning environmental planning in urban areas. It uncovers the attitudes and perceptions that have allowed the environment and people to be planned for separately. Science and scientific method have had a strong and determining influence on the way in which the environment is perceived, as the project of science is concerned with understanding the world and how it works. This chapter accordingly traces the evolution of science from its occupation with objective facts which are independent of a social and cultural background; to its emerging concerns for interconnectedness, participation and holism. The implications of these two alternative approaches for environmental planning for cities will then be considered. Finally, the role of environmentalism within the discipline of geography is commented on.

2.2 THE DUALISM BETWEEN PEOPLE AND THE ENVIRONMENT

The destruction of the environment has its roots in western culture. Environmental devastation is not new to humanity, but has increased in scale at unprecedented rates since the industrial revolution. Two factors have been identified as being the key factors contributing towards this destruction: objective science and industrial capitalism. The sphere in which the domination and control exerted by these two forces has been most vividly apparent is the city. Although capitalism and science have both played a significant, and often interdependent role in shaping the city, this thesis will focus primarily on the role of science.

2.2.1 The Mechanisation of Nature

The simile of nature being likened to a machine has its origins in the "scientific revolution" which took place over about 150 years, from the time of Copernicus (mid-16th century) to the end of the 17th century (Pepper, 1984:46). During this period, the principles of "classical" science, known as the "Newtonian paradigm", were being established. According to Pepper (1984:47)

> "the Newtonian paradigm constitutes the foundation of the modern popular conceptions of science, and it is this conception which is also the basis of technocentrism."

This world view involved a fundamental challenge to the medieval cosmology based on divine purpose, and hence not only contributed to the intellectual challenge of the establishment of science, but it also served to challenge the theology from which it stemmed.

Kepler (1605 in Pepper, 1984:47) notes that "the universe is to be likened not to a divine organism, but rather to clockwork." This mechanistic conception of nature is a major component of the classical scientific technocentric approach. God as creator was viewed as the engineer, "using geometry to make a plan from which he constructed a machine" (Pepper, 1984:48). It was believed that the creator set the machine going and then left it. This essentially deterministic view therefore perceived nature as a machine, whose workings were governed by, and predicted through, mathematical laws.

From this, a basic tenet of classical scientific philosophy was established:

> "what is truly real is mathematical and measurable, and what cannot be measured cannot have a true existence" (Pepper, 1984:48).

This reductionistic view point has resulted in what became known as the "Cartesian Dualism" popularised by Descartes, and involving the separation of mind and matter, subject and object. Pepper (1984:51) describes this dualism as having a "profound implication for the man-nature [sic] relationship because nature became composed of objects metaphysically separated from man [sic]." It was this dualism, which paved the way for a humanity-nature separation in which the former was conceived of as being superior to the latter, though Descartes himself did not draw from it the conclusion that nature was created for humanity alone (Thomas, 1983, Lovejoy, 1974 in Pepper, 1984:52).

2.2.2 The Baconian Creed

Bacon was the first figure in the scientific revolution to draw out the full implications for the human-nature relationship of the emerging principles of the "new science". It was Bacon who asserted the creed that scientific knowledge equals power over nature. Bacon grappled with the same problem as Descartes, which was the separateness of humanity from its object of study, nature. The subjectivity of the former constituted an impediment to his gaining knowledge of the latter.

> "Man [sic], the subject, was forced to interpret nature through human feelings and experiences; he [sic] had selfish interests, assumptions and presuppositions" (Pepper, 1984:54).

Bacon pursued science via the inductive method, the importance of which lay in its implications that "'truth is the daughter of time' and that science is progressive" (Pepper, 1984:54). He envisaged scientific knowledge to increase with time, and further, he maintained that scientific knowledge could not be encompassed by any one individual or age, it was hence a communal endeavour, striving towards the establishment of the "truth".

The purpose of Bacon's scientific activity was firstly to glorify God, and secondly to "relieve man's [sic] estate" (Pepper, 1984:55). Pepper (1984:55) describes Bacon's activities as being a

> "philanthropic activity in which the scientist should assume his [sic] moral duty of improving man's [sic] material lot...and that this improvement should come about by an understanding of how the machine of nature worked."

Understanding the laws of nature was the first stage in using those laws for the benefit of humanity. The two cornerstones of Bacon's philosophy - the building up of a secure basis of facts, and the improvement of the material circumstances of humanity - can therefore be characterised as having utilitarian, humanist objectives. The Baconian perception of the world provided a justification for the destruction of the biosphere for the short term benefit of humanity. The popularity of the technocentric approach lies in the fact that "it works" and is internally coherent. However, one needs to view science's progress within its social context within which it can achieve its technically workable and sophisticated designs.

2.2.3 The Enlightenment

The rise of classical science was not achieved without its becoming allied with rising social groups, and being useful (because of its Baconian image) to those groups. According to Pepper (1984:57), another image drawn from science that was used to maintain that order was the image of the "'naturalness' of order, discipline, hierarchy, competition and struggle" (Thackray, 1974 in Pepper, 1984:57). Science has also influenced notions of social development. This is exemplified in the role that science played in the emergence of the 18th century Enlightenment, which was characterised by the concept of "progress" (Pepper, 1984:57).

Newton's 18th century science demonstrated that true reality "lay not in the chaos of its surface appearances, but in the harmony and simplicity of its inner nature, which could be discovered by reason and experiment and expressed in mathematical laws" (Pepper, 1984:58). The Enlightenment philosophers found that society was characterised by injustice, inhumanity, oppression and slavery, but they had learned from science that the appearance of things is not the way they are. Reason and experiment could enable one to penetrate beneath this surface to discover the natural laws of a harmonious life, thus modifying society in such a way as to bring present social arrangements into closer conformity with the natural laws governing social behaviour. This would be a progressive step towards a just and more humane society. The Enlightenment, therefore, extended Francis Bacon's argument: science was to be not just the means of improving humanity's

material circumstances, but, more than that, the means of commanding human nature in action so as to improve the social and moral condition of humanity.

2.2.4 Positivism

The present predominant philosophical framework within which science functions is that of positivism, which defines reality as that which is empirically observable. This positivist conception of nature reflects the legacy of classical science and is inherently technocentric. Under this framework, the object of science was "to make law-like generalisations which would be true throughout time and space" (Pepper, 1984:54). These laws could in turn predict what would happen given particular circumstances, and prediction led to the ability to control. The philosophical framework is also plagued with the classical idea of detached objectivity which results in a lack of responsibility or awareness amongst scientists.

This technocentric view of nature and society, based very much on classical science, has permeated Western popular consciousness over the past two to three hundred years (Pepper, 1984:66). However, this view has been criticised by radical environmentalists. These groups reject the metaphor of nature as a machine, they reject cartesian dualism and positivism, and perceive science to be "hard-headed and cold-blooded, and advocate a highly emotionally-charged 'counter-culture'" (Pepper, 1984:66). They also reject reductionism, and want to see humanity and nature in a holistic dialectical relationship involving the material and the spiritual.

2.3 ALTERNATIVE PERCEPTIONS OF PEOPLE AND THE ENVIRONMENT

2.3.1 Natural Magic

The scientific revolution, which is characterised as a transition from medieval Aristotelian science to classical Newtonian science was paralleled by the growth of an alternative perception of the natural world, known as "natural magic" (Pepper, 1984:52). The basic tenets of natural magic were that the universe is an organism, fully alive and active. This perception of the world differed radically to that of the reductionistic Newtonian paradigm, in that the natural magic position was

> "permeated with influences, forces and correspondences that linked everything in nature, man [sic] included, to everything else, forming a

> multidimensional network that was not only material, but also mystical and spiritual" (Pepper, 1984:53).

Natural magic was profoundly experimental, but in all other aspects, it was deeply opposed to the classical science emerging alongside it in the 17th century.

Natural magic was opposed to any suggestion that a distinction had to be drawn between humans and nature, as every aspect of a human being was linked to and corresponded with part of the larger universe. Natural magic also rejected the concept of "measurement" that was central to Galileo and Descartes, on the grounds that it was incapable of dealing with a world whose fundamental elements were immeasurable and immaterial (Pepper, 1984). The existence of a powerful rival in the form of natural magic indicates that there was nothing automatic about the eventual triumph of classical science.

The idea of natural magic has been re-introduced in the early 1970s by Lovelock's Gaia hypothesis which views the earth as a living system, characterised by interconnectedness. Pepper (1984) notes that this notion of interconnectedness breeds an environmental sensitivity to the extent that "the violation of nature constituted the violation of the human body". Lovelock's work is characteristic of the progressive approaches towards the environment that have emerged since the 1980s.

2.3.2 Radical Environmentalism

The 1980s heralded the beginnings of a new era in environmentalism, marked with a new means of thinking in respect of the environment. Until the 1980's, the spectrum of concerns covered by environmentalists included resource conservation, human welfare ecology, preservationism and animal liberation (Eckersley, 1992). The new era in environmentalism marked the debut of a new left in environmental thought, with the introduction of ecocentric or radical environmentalism. The radical environmentalists challenge the modernist world view which developed out of 17th century revolutionary thinking, and aim at a "revision of modern premises and traditional concepts". This standpoint "opens itself to the recovery of truths and values from various forms of premodern thought and practice that have been dogmatically rejected by modernity"

(Griffin, 1988 in Poynton, 1991) and centres around identification with nature, which has the potential to free science of its dehumanising associations.

A common feature of all radical environmental thinking is the movement from a mechanistic world view to an organic one. It marks the re-emergence of the concept of "natural magic" which grew alongside the traditional view held during the scientific revolution and which is still prevalent today. This view is "opposed to any suggestion that a distinction had to be drawn between humanity and nature, as subject and object" (Pepper, 1984), leading to great environmental sensitivity, whereby "the violation of nature constitutes a violation of the human body." Developments like the Gaia concept as proposed by Lovelock, and "Greening of the Self" as put forward by Macey (1990), suggest a re-emergence of "natural magic", with its re-enchantment of scientific thinking. Holism, phenomenology and deep ecology are the three dominant perspectives that characterise radical environmentalism.

Radical environmentalism, itself, is an umbrella concept, under which a number of splinter groups with varying biases fall. Included amongst these are the ecofeminist and ecosocialist movements. What follows is an account of the three dominant perspectives or cornerstones (holism, phenomenology and deep ecology) that unite all forms of radical or ecocentric environmentalisms. Ecofeminist and ecosocialist ideologies will also be reviewed. As there is substantial difference in opinion with regards to the usefulness of these two forms of environmentalism, a critique of these approaches is presented in order to assess their relevance for South Africa.

2.3.2.1 Holism

According to Poynton (1987), the term "holism" appeared in the environmental literature over sixty years ago with the publication of Smut's "Holism and Evolution". The work done by Smuts stands as an early attempt to restructure science by introducing organic, process-based thinking with a strong ecological basis. The idea that "the whole is greater than the sum of the parts" is the definition used by Smuts. However, Smuts's term holism is now conventionally used as a label for concepts that do not seem central to the term as Smuts himself used it (Poynton, 1991). The definition of the term "wholism", which

revolves around the notion that "the whole is greater than the sum of the parts, and is also different to the parts" has become more popular (Poynton, 1987:188). The value of holism lies in the fact that it challenges reductionism, which breaks the world up into unconnected pieces. The elements of nature (people included) are hence no longer abstracted and reduced to parts, but are seen in their ecological context.

2.3.2.2 Phenomenology

Another school of thought that encourages this move back towards "natural magic" is that of phenomenology, which is a philosophical movement founded by Husserl (1859-1938). Husserl hoped to establish a secure framework of concepts with which to "ground" all of the other sciences, and as such his phenomenology was designed to "disclose the world as it shows itself before scientific enquiry, as that which is pre-given and presupposed by the sciences" (Pickles, 1985:3 in Cloke *et al*, 1991). This approach "concentrate(s) on the scrupulous inspection of conscious experience, putting aside the 'cloak of ideas' such as traditional philosophical questions, presuppositions and explanations" (Poynton, 1991), and therefore allows one to interact with the underlying essence of reality which can be understood. One of the basic tenets of phenomenology is that we in ourselves are part of nature and can therefore know it from within as well as without, by direct acquaintance, empathy, sensing, intuition or what ever one may choose to call the process.

By interfacing with the world without presuppositions, phenomenology serves to bridge the gap between the "self" and "the world" thereby breaking down dualisms. As such, phenomenology provides a powerful critique of positivism "which disavows any such reflection as meaningless metaphysics" (Johnston *et al*, 1992:342), and which assumes that objects of the world can be known to human subjects in an entirely unproblematic fashion (Cloke *et al*, 1991:72).

Husserl (in Cloke *et. al*, 1991:72), suggests that phenomenological reflection will allow researchers to refound all of the sciences from physics to geography on the basis of a true appreciation of the world's objects in relation to the world's subjects. Husserl's phenomenology has been criticised for being very strict, demanding and to many of us, a metaphysical project (Cloke *et al*, 1991:72). Various philosophers after Husserl have hence

sought to soften or recast the outlines of this project in a manner that might prove more helpful to other areas of intellectual activity. For example, Merleau-Ponty and Schutz have posited alternative phenomenologies - *existential* or *constitutive phenomenologies* - that preserve some of the basis of Husserl's phenomenology. These projects talk less in terms of transcending the everyday and more in terms of studying precisely those everyday meanings etched into the realities of particular peoples, societies or cultures (Cloke *et al*, 1991:73).

2.3.2.3 Deep Ecology

In his book *"Toward a Transpersonal Ecology"*, Fox (1990) deals at length with various approaches and attitudes relating to our current knowledge of ecological interconnectedness and holism. Fox (1990) recognises two broad kinds of environmental value theory. The first being an *instrumental value theory* which has a utilitarian ethic, where the interconnections between humanity and nature are restricted to use-value or resource value for humans. The second value theory dealt with by Fox (1990) is the *intrinsic value theory* in which intrinsic value is extended to include the natural world. In this framework, environmental ethics becomes a major issue. However, the viewpoint supported by Fox rejects both these value theories and instead of moral injunctions, experiential invitations are given, inviting people to

> "experience themselves as intimately bound up in the world around them, bound up to such an extent that it becomes more or less impossible to refrain from wider identification" (Fox, 1990:245).

This new paradigm of thought is clearly radically different to the view point held by the value theorists and has gained the name Deep Ecology, renamed Transpersonal Ecology by Fox (1990), mainly because it involves

> "a sense of self that extends beyond one's egoic, biographical, or personal sense of self" (Fox, 1990:198).

Deep or transpersonal ecology interests itself not in moralizing, but in encouraging a sense of identification, of acting benevolently by inclination, of opening up to ecological awareness. For transpersonal ecologists, given a deep enough understanding of the way things are, the response of being inclined to care for the unfolding of the world in all its aspects follows "naturally", not as a logical consequence, but as a psychological

consequence; "as an expression of the spontaneous unfolding (development, maturing) of the self" (Fox, 1990).

The origins of the term "deep ecology" are associated with Arne Naess who endeavoured to ask progressively deeper questions about the how and why of ecological relationships, going beyond everyday technical and scientific matters to clarify fundamental presuppositions underlying value priorities. The result of this questioning was a reassessment of self, in which a distinction was made between "self" as narrow, reductionistic, isolated sense of self, and "self" as a wide, holistic, field-like open sense of self including the natural environment and other people. Naess maintained that "to realize the Self" is the same as to realise the "Truth" (Poynton, 1991). In order to act within the environment therefore, we need to have a new understanding of ourselves.

2.3.2.4 The Future

Having established the basis of the radical environmental movement, it is important to assess the possibility of timeously executing a successful paradigm shift from 17th century classical science to a new worldview. It is contended that despite the traditional stubbornness associated with paradigm shifts, there exists a great potential for the popularisation of a new worldview. However, the point of concern is whether or not this shift will occur quickly enough to save the environment which is already under significant threat.

In her paper entitled *Greening of the Self*, Macey (1990) points out that "a spiritual change which generates a sense of profound interconnectedness with all life is hardly new to our species." She cites activities currently undertaken in defence of life on earth, actions in which people unselfishly risk their lives to protect other species. The Chipko, or tree hugging movement in North India is a case in point, where the villagers fight deforestation of their remaining woodlands. Another group of activists identified by Macey (1990) who risk their lives for the environment is the Greenpeace movement. Another ancient following that encourages non-dualistic spiritualities is that of Buddhism which "undermines categorical distinctions between self and other, and belies the concept of continuous self-existent entity" (Macey, 1990).

Another important point in support of a paradigm shift is the observation that the concept of "natural magic", which parallels contemporary postmodern environmentalism, indeed has its roots in the 17th century. Also, notions of respect, and the identification of interconnections between the natural world and humanity, has been the basis of survival for numerous primitive tribes, such as the American First Nation People and the Southern African San. It is suggested that almost every human being has at some stage of their lives, consciously or unconsciously, had a transpersonal interaction with the natural world. The potential for such an interaction therefore does exist, but must be identified and encouraged.

The parameters of radical environmentalism have been extended by some environmental movements to include political, economic and social concerns. Ecofeminism and ecosocialism are two such examples, whereby a radical restructuring of the status quo is called for in order to liberate the environment as well as society.

2.3.2.5 Ecofeminism

A radical movement included under the label of radical environmentalism is that of the ecofeminist movement. Ecofeminists take the worldview of the deep ecologists who have criticised reform environmentalists for not being sufficiently radical. Like the deep ecologists, ecofeminism is concerned with our sense of self and the way in which we experience the world rather than with formal value theory (Eckersley, 1992:63). Also parallel with deep ecologists, ecofeminists proceed from a process oriented, relational image of nature that seeks mutualistic social and ecological relationships based on the recognition of the interconnectedness, interdependence and diversity of all phenomena (Eckersley, 1992).

However, unlike deep ecology, ecofeminism has taken the historical and symbolic association of women with nature as demonstrating a special convergence of interests between feminism and ecology. Their argument is that other ecocentric approaches have neglected the crucial role played by patriarchal industrialism and capitalism in shaping the cultural categories responsible for Western humanity's domination of nature (Zimmerman, 1987:20). Ecological feminists maintain that there are important connections between the domination of women and the domination of nature. Modern science is a "masculine and

patriarchal project which necessarily entailed the subjugation of both nature and women" (Shiva, 1988:15).

Warren (1990:125) maintains that the conceptual connections between the dual dominations of nature and women has its roots in an oppressive conceptual framework characterised by a logic of domination that emerged with the onset of the scientific revolution, and which has dominated thinking ever since.

Just as ecology speaks for the earth, for the "other" in human/environment relationships; and feminism speaks for the "other" in male/female relationships; ecofeminism by speaking for the original others, seeks to understand the interconnected roots of all domination, and identify ways to resist and change (Plant, 1991). Within ecofeminism, patriarchy is challenged as the source of oppression of both nature and women. An awareness of domination at all levels is cultivated through the movement which is organized in a non-hierarchical manner based on consensus decision making (Plant, 1991).

2.3.2.6 Ecosocialism

Ecosocialism challenges capitalism, which is seen to be the root cause of ecosystem degradation as well as social injustice. The liberation of the working class from the oppression of the capitalist system is hence linked to the struggle for the emancipation of nature (Ryle, 1991). The expansionary dynamics of capital accumulation have led to widespread ecological degradation and social hardship. According to Eckersley (1992:121), the imperative for continual economic growth does not respect physical limits to growth or ecological carrying capacity.

Capitalism also generates uneven development (both within and between nations). The increasing international mobility of capital has led to serious trade imbalances and external indebtedness on the part of Third World nations, which has generated widespread ecological degradation and poverty (Eckersley, 1992).

According to Pepper (1993), the concept of ecosocialism emerged largely as a response to the 1992 Earth Summit. The Summit demonstrated that the powerful vested interests

behind Western capitalism have no intention of radically changing their goals and methods to help create an environmentally sound or socially just society. Pepper's (1993) ecosocialism involves the redefinition of needs, the redistribution of resources and the reassessment of the industrial mode of production. However, more radical ecosocialism would go further, and focus on new forms of production which replace private ownership in favour of social justice, and seek new forms of social order which "eliminate alienation, state control, and centralisation" (Pepper, 1984:197).

Ecosocialists argue therefore, that the logic of capital accumulation is fundamentally incompatible with ecological sustainability and social justice. They argue that "capitalism must be largely replaced with a nonmarket allocative system that ensures ecologically benign production for genuine human need" (Eckersley, 1992:122). In order to confront the roots of environmental degradation, sectors of the green movement saw the development of a coherent ecosocialist politics as being imperative to allow people to control their own lives and their relationship with their environment.

2.4 IMPLICATIONS FOR SOUTH AFRICAN URBAN PLANNING

2.4.1 Influence of science on urban planning

The scientific methodology that arose in the 17th century, and its impact on western thought has had profound effects on the way in which the environment is regarded in urban planning in South Africa. It has resulted in the environment and cities being planned for in geographically separate areas. Dewar's (1992b) strategy for restructuring the city by "maintaining a fixed edge between urban, agricultural and rural pristine land" is a prime example of this dualism. Dualistic, reductionistic thinking has served to create a stark distinction between urban and rural areas. Urban areas are characterised as being "the built environment", whereas rural areas are considered to be more "natural" or "agricultural". Where nature has been allowed into the city, it has been introduced as a form of aesthetic, for the pleasure of people, and hence having utilitarian value. In addition, as noted earlier, where green spaces have been introduced into the city as an attempt at bringing the "countryside into the city" (Kivell, 1993), these spaces serve as ecological or green deserts, which perpetuates the dualism in planning.

The city is also the arena in which the philosophy of the Enlightenment period has reached its pinnacle. The urban environment represents domination over nature for the progress of society. The natural environment has been subordinated and replaced by a synthetic landscape, aided by technology.

The objective dualism promoted by modern science has served to legitimate the exclusion of environmental concerns in the planning of our cities resulting in cities being hostile, sterile environments. There is a rising awareness that cities are a root cause of the global environmental crisis. Indeed, South African cities have been described as being inefficient and wasteful due to a lack of integration of concerns for the environment and development. It is clear therefore that an alternative approach is required in order to alleviate the pressure on the environment.

2.4.2 Relevance of Radical Approaches for South Africa

Radical approaches towards the environment have an important role to play in the environmental movement in general in First World countries. As these approaches are often provocative and invoke much controversy, they have attracted much attention in the international media. They have thus been positioned on the extreme left of the environmental spectrum. This has resulted in a shift in attention away from what have now become more moderate and liberal environmental groups. The "moderates" can now get on with the job of conscientising the public and industry with regards general environmental issues, without much political resistance.

Within the present South African context, as progressive as the radical environmentalists are, their value is limited. A radical approach, foregrounding the environment, in a country in which the environment has been regarded as a class based, racial issue, will be viewed with great suspicion and resistance. In addition, whilst the predominant worldview is still grounded in old paradigms of thought, instilling radical environmental philosophies to the majority of people will be a difficult task. This challenge is compounded by the different cultural attributes that have been assigned to the environment in South Africa.

Radical approaches towards the environment have not gone unchallenged. Primary amongst these is that it serves to entrench the dualism between women and men. An ecofeminist analysis of environmental relations involves seeing women in relation to men but asserts that women and the environment are both victims of the domination imposed by patriarchy. Jackson (1993:672) adds that "linking women with nature constructs women as 'other', it prevents more useful gender analysis and has damaging practical consequences." Furthermore, Jackson (1993) concludes that there are no grounds for assuming an affinity between women's gender interests and those of the environments and that such a view is "symptomatic of the gender blind, ethnocentric and populist character of western environmentalisms."

A tendency towards reductionism is illustrated by the arguments maintained by some ecofeminists that it is patriarchy that lies at the root of the domination of women and nature. Eckersley (1992) criticises this argument as it suggests that the principal focus of an emancipatory ecological praxis must be patriarchy rather than anthropocentrism. She goes further to add that reducing the roots of domination to one source is short-sighted and reductionistic. Similarly, ecosocialism attributes social inequality and environmental destruction to the system of capitalism, which is also reductionistic way to analyse the world.

Radical approaches towards the environment serve to politicise the environment. Within the South African context, where political parties are strongly polarised with regards to their priorities, this could result in the further side-lining of environmental concerns. The marginalisation of the environment can be further entrenched, especially if associated with a less powerful and popular party. In addition, acts of eco-sabotage carried out by ecocentric environmentalists as strategies to circumvent environmental degradation will be viewed with a great degree of discomfort in South Africa, which has a contentious history of violence around human rights.

A priority issue on the agenda of the Government of National Unity is increasing the quality of life for all, especially the poor and the marginalised. Radical approaches do not address issues of poverty and quality of life, and can consequently not meet the priorities

of the present political agenda. What is needed in South Africa is a framework for development that draws clear links between peoples' quality of life and environmental concerns.

In view of the shortcomings of radical approaches to the environment, it is clear that an alternative framework for addressing social and environmental injustice in South Africa is required to deal with these issues in a realistic manner. It is important to note that this alternative does not represent a compromise position, but rather an valid and wide-reaching strategy to ensure that environmental concerns feature on the development agenda. It is suggested that the framework of sustainable development is a more appropriate strategy for intervention in South Africa.

2.5 SUSTAINABLE DEVELOPMENT

The concept of sustainable development made its debut at the United Nations Conference on the Human Environment (Stockholm, 1972), where it was regarded as a reformist strategy by radical environmentalists ensuring that no further environmental degradation occurs, whilst repairing damage that has already been inflicted upon the environment (Boswell, 1994). Sustainable development is a form of environmentalism that embraces the ideals of integration and participation of people and the environment. Placing people within the environment is complimentary to the approach taken by the radical environmentalists. It is considered to be an ideal framework for urban development in South Africa as it extends the definition of the environment to include living and working space, and the natural and the built environment. In so doing, it serves to break down the dualism between people and the natural environment. Furthermore, since the primary objective is the alleviation of poverty, the quality of life of people is a priority.

The definition of the environment and environmentalism has undergone a drastic shift since the 17th century. The environment now embraces both people and the natural world and their interactions. This increase in the scope of environmentalism gives rise to a disciplinary discomfort amongst the pure sciences, whose methodologies and paradigms for understanding the world disallow such an integration. However, geography with its long-standing tradition of integrating human and environmental concerns is an ideal discipline

within which such concerns can be addressed. A brief review of some disciplinary concerns follows before examining the concept of sustainable development in greater detail in chapter three.

2.6 ENVIRONMENTALISM IN GEOGRAPHY

A notable feature of the 1980s and 1990s has been the permeation of environmentalism into almost every aspect of modern life (Brooks, 1992; Vogel, 1992). The environment has come to be a "politically correct" topic in spheres ranging from popular culture to international politics to academia. In most first world countries, environmentalism is high on the political agenda, as well as on the research programmes of a variety of disciplines. The environmental concerns in Sub-Saharan Africa however, have their roots in both first- and third- world settings and therefore require a distinctive research agenda. Much attention has been paid to conventional first-world "green" issues like air pollution, ozone depletion and mining of pristine areas. However, little focus has been directed towards third-world "brown agenda" problems associated with low-income housing, hazards linked to overcrowding, waste disposal and energy provision. It is encouraging to note that in South Africa, the environment is being taken more seriously at a popular level, and increasingly at a political one. Geographers are particularly well placed to provide the skills needed to address South Africa's environmental challenges (Preston-Whyte, 1983; Brooks, 1992; Vogel, 1992). As geographers, we possess more than a passing knowledge of both the natural and social sciences (Kates, 1987). The pluaralistic nature of the discipline allows us to answer what Kates (1987) has termed "great questions".

The discipline of Geography has had a long tradition of interest in the complex relationship between people and the world in which they live. "Contemporary concerns about the environment, sustainability, and the prospects of reconciling conservation and development, strike to the very heart of the discipline" (Brooks, 1992:168). Sustainable development and Local Agenda 21 share with geography this interdisciplinary approach, combining the relationship between people and the world in which they live. It is therefore suggested that geographers are well positioned to take up the sustainable development challenge. However, few geographers have taken up the challenge of addressing South Africa's environmental concerns. Vogel (1992:173) ascribes their failure to do so to the insular and

poor communication between human and physical specialists. Commenting on the division between physical and human geography, Stoddart (1987) expresses a concern that neither physical nor human geography has a viable independent existance, and in the absence of a unified geography will disintegrate into component specialisms at risk of absorption by neighbouring disciplines. Preston-Whyte (1983:2) maintains that a fundamental cause of this split in geography is a lack of a unifying paradigm. This chasm that exists within the discipline can be directly attributed to the dualisms created by science, which has not allowed for societal interests to be addressed together with the physical sciences. It is recommended that environmentalism be adopted as a core paradigm to unite the discipline (Preston-Whyte, 1983).

The tension that exists between the physical and human components of geography can be attributed to a lack of congruence in methodology. Physical geography has traditionally been based on positivism, and has accepted that the route to true understanding is through detachment (Preston-Whyte, 1983). Developments in human geography have rejected the reduction of reality into concerns over space and structure, and denies the need for a detached objectivity.

The integration of social and natural components of geography results in a crisis in methodology. The natural component of geography is positivist in approach, and is likely to remain so; the social component is in the process of experimenting with alternative ideologies including postmodernism and post-colonialism. Neither paradigm should be inhibited. Preston-Whyte (1983) suggests that instead,

> "a paradigm should be sought that simultaneously permits a return to the geographers role as an integrator of the social and natural sciences, yet which accommodates all approaches. It should provide a bridge between the natural and social sciences and, because consciousness of the natural environment is deeply embedded in the intellectual thought of each of us, should offer a point of contact between geography and its public. Environmentalism is such a paradigm."

In conjunction with shifting content, environmental problems need to be examined from a new perspective that rests on an improved understanding of prevailing issues and a greater sharing between the guardians of knowledge in South African geography (Vogel, 1992).

This thesis falls within this paradigm of environmentalism. Its concern is with linking human behaviour (urban planning) with the environment. It is therefore subject to this crisis in methodology, wherein a detached, positivist approach is inappropriate. No "scientific methodology" is followed; instead, this thesis takes the form of a critical analysis of urban planning in South Africa using the theoretical framework of sustainable development - to be elaborated in chapter three.

2.7 SUMMARY

This chapter offered an account of the way in which the clinical attitude of a mechanistic, alienating, exploitative culture, with its roots in the 17th century scientific revolution, has inflicted damage on itself and on the world around it. It went on to examine the technocentric, utilitarian, reductionistic world view that resulted from this ideology, as well as the implications that this has had for approaches to city planning. An alternative, radical environmentalism, whose cornerstones lie in the philosophies of holism, phenomenology and deep ecology is explored as a possible solution for our environmental malaise. It is contended that the possibility of a paradigm shift from the mechanistic modern paradigm, to the organic postmodern one is not ill founded, and that the seeds for such a shift have already been planted.

The point of concern is that, given the large duration of time that is required for a paradigm shift to be executed, certain reformist strategies will have to be enforced in the interim to ensure that when the paradigm shift is completed, humanity has a natural world in which to interact. Due to the limitations of the radical approaches towards the environment, sustainable development is the framework that has been suggested as a more appropriate measure to ensure that environmental issues get onto the development agenda. The appeal of this approach is that it combines the needs of people and the environment into a single strategy. The next chapter explores the concept of sustainable development and its implications for South African urban planning.

Chapter 3

SUSTAINABLE DEVELOPMENT: IMPLICATIONS FOR THE URBAN POOR

3.1 THE URBAN ENVIRONMENTAL CHALLENGE

Humanity is undergoing a great migration from rural to urban areas. According to Girardet (1992), some 20 million people move to cities every year, a human transmigration unprecedented in history. Cities are the centres of industrial and economic growth, and hence offer a chance for a life with more alluring prospects. They are particularly attractive to rural people in the developing world who are increasingly unable to eke out a living in the overpopulated, environmentally degraded rural countryside. Indeed, in the early 1990s, 19 out of the world's 25 largest cities were in developing countries. According to Hardoy and Satterthwaite (1991), the Third World's urban population is already larger than the total population of Europe, North America and Japan combined. Furthermore, most Third World nations are still urbanising, most at an unmanageable rate. Africa's urban population is increasing at a rate of about five per cent per annum, and is set to double every 14 years (Roberts, 1994). South Africa's urban population is expected to grow from approximately 16 million in 1985 to approximately 36 million in the year 2000 (Roberts, 1994). This implies that by the end of the century, 80 per cent of South Africa's population will be living in cities.

The human race is rapidly evolving from a species of hunter-gatherer to "supermarket hunter-gatherer" (Roberts, 1994:8). The city has become a symbol of humanity's control, especially over the natural environment. This manipulation of the natural environment has led to cities becoming the focal point in the conflict between people and nature. The natural environment provides a source of resources upon which city functioning depends, as well as a sink for pollution emanating from urban activities. This results in cities posing a threat, not only to the survival of the natural landscape, but to the very existence of urban society as we know it (Roberts, 1994).

It is therefore evident that an obvious prerequisite for the continued survival of "urbanites" is the holistic inclusion of environmental considerations in urban planning. The Earth Summit (United Nations Conference on Environment and Development), that was held in

Rio de Janerio in June 1992, had as its prime focus the inclusion of sustainable development in the environmental agenda for the twenty first century. The aim of the Earth Summit was to gain agreement by world governments on an approach to sustainable development, to draft treaties on preserving bio-diversity and limiting climate change (Hindson, 1994). Another important aim of the Earth Summit was to draw up and adopt Agenda 21, which is a declaration of principles and policies on the environment and development to apply from the present and into the 21st century.

It was recognised at Rio that the international focus is mainly on natural resource issues and the intergenerational equity issues of global warming, the ozone layer, and acid rain (Bartone, 1991), collectively dubbed the "green agenda". Far less attention has been directed to the growing environmental crisis in towns and cities of the Third World, dubbed the "brown agenda" (World Bank, 1993). The "brown agenda" includes environmental problems that are directly linked to the development process, such as: the lack of safe water supply, sanitation, and drainage; inadequate solid and hazardous waste management; uncontrolled emissions from motor vehicles, factories, and low-grade domestic fuels; accidents linked to congestion and crowding; and the occupation and degradation of environmentally sensitive lands; as well as the inter-relationships between these problems. It was therefore clear that an environmental agenda that recognises the cycle of poverty, resource depletion, and environmental degradation in urban areas had to be developed separately.

As a result of the recognition of environmental problems in cities, a separate conference with the single theme of *"Cities and Sustainable Development"* was held during June 1994 in Manchester. The aim of Global Forum '94 was to build on the experiences of the Earth Summit, and to translate its spirit into practical solutions and action plans. The participants at Global Forum '94 comprised multi-sectoral delegations from cities throughout the world. These participants submitted recommendations for action to national and local governments, to Local Agenda 21, and other United Nations initiatives on the environment and sustainable development. Global Forum '94 took the form of plenary sessions and workshops organised around seven major themes that were agreed upon in Rio to encapsulate all of the components necessary to attain urban sustainability. These were:

basic needs and poverty reduction, urban unemployment and livelihoods, resource use and management, finance and sustainable development, governance, partnerships and institutions, urban environment and health, and transport and communications. This change in focus from the "green" to the "brown" agenda is increasingly evident in South Africa as well.

Drawing largely from the experiences of Global Forum '94 as well as from a wider literature, this chapter aims to explore the concept of sustainable development, illustrating how it balances conservation and development needs whilst addressing the welfare of the poorest groups. It then draws on international advances in sustainable development to provide insights for possible directions for the restructuring of South African cities.

3.2 SUSTAINABLE DEVELOPMENT: CONCEPTS AND CONTRADICTIONS

3.2.1 Sustainable development in theory and practice

The use of the term "sustainable development" has been shrouded in much confusion largely due to the difficulty of formulating a definition which is comprehensive but not tautological, and which retains analytical precision. Redclift (1992) recognises that one of the sources of the conceptual confusion surrounding the term is that no agreement exists regarding what exactly is to be sustained. The goal of sustainability sometimes refers to the resource base itself, and sometimes to the livelihoods which are derived from it. Although the concept is often used as if consensus exists concerning its desirability, ecologists, developmentalists, environmental planners, economists and environmental activists all mean very different things when they use the term due to their disciplinary biases, distinctive paradigms and ideological disputes (Redclift, 1992).

The most straightforward and certainly the most widely used definition of sustainable development is that of the World Commission on Environment and Development (WCED), also known as the Bruntland Commission (an independent group with representation from both the developed and the developing world commissioned in 1984 by the United Nations to identify long-term environmental strategies for the international community). The WCED (1987; cited in Elliot, 1994:5) defined sustainable development as *"development which meets the needs of the present without compromising the ability of future generations*

to meet their own needs". This definition has been described by Adams (1993) as "neat, but far from a clear base upon which to build new theoretical ideas about development." In order to offset the simplicity of this definition, the Commission goes further to identify the challenges for effecting sustainable development in practice (Figure 4).

Core Issues:
* Population and development;
* Food and security;
* Species and ecosystems;
* Energy;
* Industry;
* The urban challenge.

Pursuit of sustainable development requires:
* A political system that secures effective citizen participation in decision-making;
* An economic system that provides for solutions for the tensions arising from disharmonious development;
* A production system that respects the obligation to preserve the ecological base for development;
* An international system that fosters sustainable patterns of trade and finance;
* An administrative system that is flexible and has the capacity for self correction.

Figure 4: Core issues and necessary conditions for sustainable development as identified by the World Commission on Environment and Development. (Source: WCED, 1987 cited in Elliot, 1994)

The Commission identifies six core issues which need to be tackled to attain sustainability. These include: population and development; food security; species and ecosystems; energy; industry; and the urban challenge. However, even this list has obvious shortfalls, as it does not include issues of poverty, access to resources and basic services, as well as gender and age inequalities with regards to access to resources. In its favour however, WCED does acknowledge that in order to pursue sustainable development, various systems (including the political, economic, production, technological, international and administrative systems) will have to work together in a transparent, participatory manner.

The term "sustainable development" brings together two strands of thought about the management of human activities - one concentrating on development goals, the other on controlling or limiting the harmful impacts of human activities on the environment (Hardoy

et al, 1993). Generally, most discussions about sustainable development fall within the WCED definition, although different groups choose to emphasise different aspects. Within these interpretations, there are many different understandings of what is meant by the words "development" and "sustainable".

Much discussion and literature on sustainable development concentrates on ecological sustainability. Similarly, many authors who discuss what they call "sustainable development" do not include a discussion of "development goals" at all, and are in essence discussing environmental sustainability and not sustainable development. Hardoy *et al* (1993) stress that understanding the roots of this emphasis on sustainability over development is central to a concern for sustainable development and cities, since it has important implications for all urban policies.

In summary, thinking on sustainable development is diverse, and these different perspectives derive from significantly different ways of conceiving of the development process, ways which have distinct political implications (Cole, 1994). However, there is a clear mainstream within it derived from three documents that between them span the years between the United Nations Conference on the Human Environment in Stockholm in 1972 and that on Environment and Development in Rio 1992. The mainstream constitutes the landmarks of the sustainable development debate, including the *World Conservation Strategy* (IUCN, 1980), *Our Common Future* (Brundtland, 1987) and *Caring for the Earth* (IUCN, 1991). The mainstream draws upon the more reformist end of the spectrum of ideas about sustainable development, whilst other streams provide a very different, and far less reformist agenda for development action (Adams, 1993).

3.2.2 Mainstream thinking in Sustainable Development

Mainstream thinking does not challenge the economic system, or economic growth in its quest for a sustainable, environmentally aware, egalitarian society. Its realm of intervention lies centrally within the existing economic paradigms of the industrialising North (Adams, 1993). Economic growth is seen as the only way to alleviate poverty, and hence to achieve environment-development objectives.

Within this paradigm, it is held that poverty puts pressure on the Third World environment. Further, it is reasoned that economic growth will remove that pressure and it is only the ending of dependence which will enable these countries to outpace their environmental problems. This reason has obvious flaws as demands for energy and raw materials and the resultant pollution that are associated with growth and increased production and consumption, are not considered.

Adams (1993) notes that in addition to the failure of mainstream thinking on sustainable development to challenge the capitalist growth paradigm, it is also remarkably resistant to ecocentrist or biocentrist elements within environmentalism. The World Conservation Strategy (WCS) does include moral arguments for conservation, but the proposals of the WCS do not build on this moral position, and instead focus on pragmatic, utilitarian and technocentrist ideas.

Mainstream thinking has also been criticised for lacking a clear framework for analysing political economics (Adams, 1993). The WCS does not consider the structures of wealth and power that constrain the management and use of living resources. First and Third World countries have disparate abilities to implement sustainable development strategies for social and economic reasons. In addition, the challenges faced by First and Third World countries differ, with "green agenda" issues being prioritised by First World countries, and "brown agenda" issues being of greater importance in Third World countries. These social and political changes that are needed to meet conservation goals are also omitted by the WCS.

It is clear therefore that mainstream thinking on sustainable development tends to be reformist and technocentrist, and is situated firmly within a paradigm of continued economic growth which does not challenge prevailing power relations.

3.2.3 Counterpoints in the Sustainable Development Debate

Mainstream thinking on sustainable development does not constitute the only perspective on the subject. There exists a range of other ideas, of which ecosocialist and ecofeminist views have already been mentioned. The importance of these approaches is that they

challenge what they perceive to be the root causes of the environmental crisis, not just the symptoms. Their solutions are hence potentially more sustainable and constructive, but more difficult to implement within the present paradigm and political order.

In addition, radical forms of sustainable development challenge the lack of social responsibility or awareness among scientists that arose partly from the legacy of the classical idea of detached objectivity. They also see the development process to be intimately linked to the environment and *vice versa*. This strategy allows for a more holistic approach to be adopted.

Egalitarian notions are also celebrated, whilst oppression, dominance and competition are challenged and seen to contribute to both degradation of the environment and human suffering. People and the natural environment are awarded the same priority, which is in keeping with the tenets of Deep Ecology. Within the current South African context, any environmental project that has egalitarian ethics is likely to have more credibility, and will serve to put environmental issues more firmly on the development agenda. The Reconstruction and Development Programme (ANC, 1994) emphasises that the way to real development is through democracy which allows everyone the opportunity to shape their own lives and to make a contribution to development. In addition, it calls for the integration of growth, development and redistribution into a unified programme. As the foundations of the RDP are egalitarian, it is positioned well as a programme that has the potential to face a sustainable development challenge.

3.2.4 Conclusion

When one considers the concepts and contradictions embedded in sustainable development and its historical development, it becomes clear that the adoption of the concept as a planning strategy must be done with caution. It is essential that the meaning of the concept in each context is made explicit, as it has the potential to be used and abused depeding on the disciplinary biases and priorities of the planners implmenting the concept as a strategy for development.

3.3 CITIES AND SUSTAINABLE DEVELOPMENT

3.3.1 The sustainability of cities

Prior to the Earth Summit (1992), very little consideration had been given to cities in the literature on sustainable development. This trend persisted despite the fact that it is within cities that a considerable (and growing) proportion of the world's population lives, and where a much higher proportion of all resource use and waste generation is concentrated (Mitlin, 1992). The concept of a sustainable city is in fact misleading as no city can sustain itself by drawing only on the resources within its boundaries. According to Mitlin (1992:3), what is sought in sustainable development is not "cities that can sustain themselves" but cities where the inhabitants' development needs are met without imposing unsustainable demands on local or global natural resources and systems.

Furthermore, it is the specific production and consumption patterns within cities that threaten ecological sustainability. It is hence these patterns that must be made sustainable, and not cities *per se*. According to Mitlin (1992), it is the consumption patterns of the middle- and upper-income groups, as well as the countries of the North and the goods and services they consume, which account for most of the depletion of the earth's finite resources and the generation of most of its polluting wastes.

Any consideration of sustainable city development in the developing world must in addition have the improvement of the housing, living, and working environment of poorer groups as a central focus. The majority of urban dwellers in the developing world live in life-threatening conditions, due to "unsafe and insufficient water, poor quality and often overcrowded shelters, inadequate provision for sanitation, garbage and drainage, unsafe housing sites and the lack of health care" (Mitlin, 1992:3). The importance of the term "sustainable development" then, is that it brings together development priorities (meeting human needs) and environmental priorities (controlling or limiting the harmful impacts of human activities on the environment). It is clear therefore that the achievement of sustainable development requires the simultaneous achievement of social, economic, political and ecological goals (Hardoy *et al*, 1993) (Figure 5).

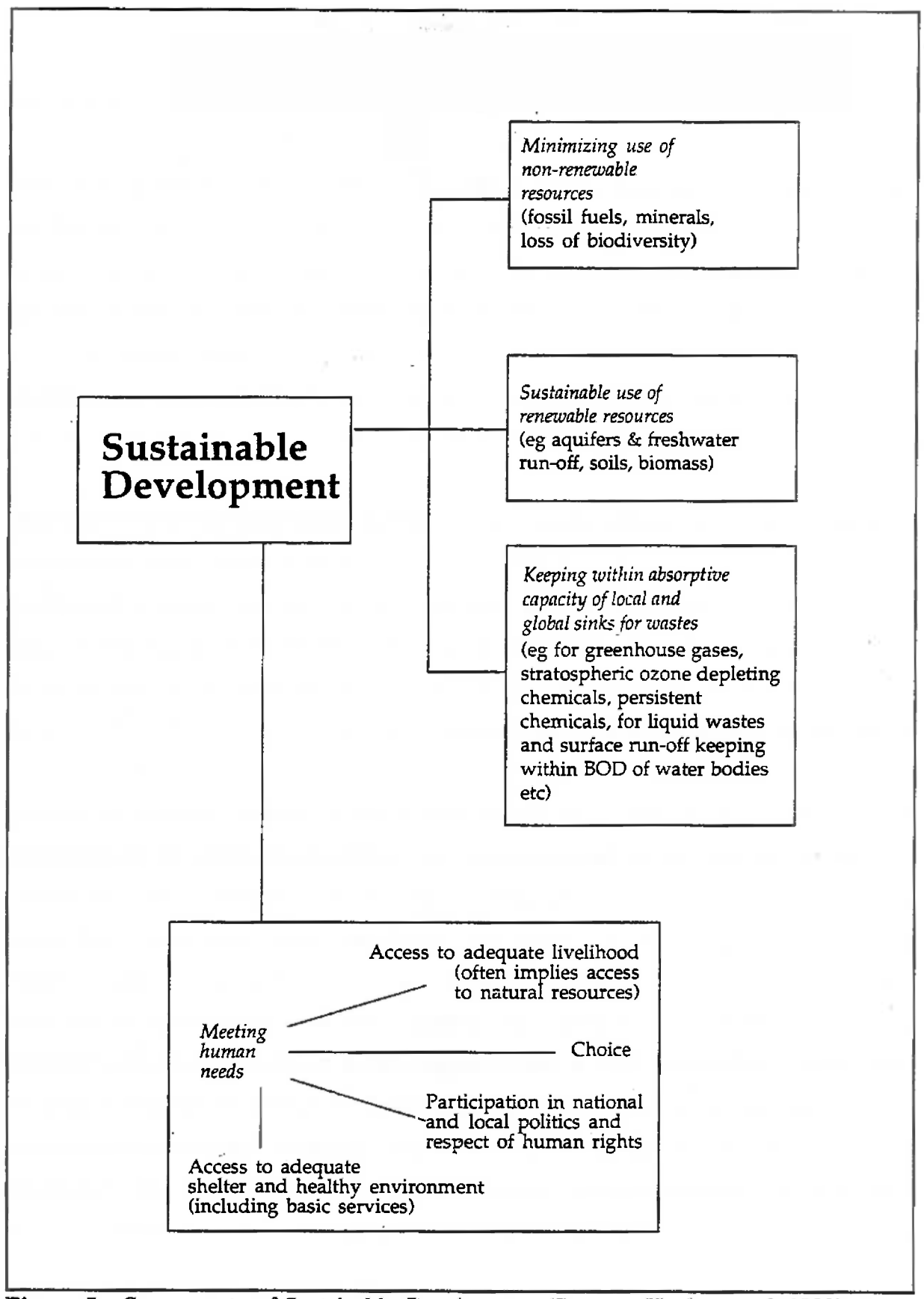


Figure 5: Components of Sustainable Development (Source: Hardoy *et al*, 1993).

In most cities worldwide there exists a contradiction between sustainability and development. Mitlin (1992:4) states that

> "Often, cities that can be ranked positively in terms of development criteria (i.e. where social, economic and political goals are met) have the highest per capita draws on environmental capital (i.e. use of non-renewable resources, draw on watersheds, forests, agricultural systems and ecosystems' waste absorption capacities and per capita emissions of greenhouse gases and stratospheric ozone depleting gases). Most of the world's cities with the least draw on environmental capital are the ones which perform worst in development terms with high proportions of their population lacking safe and sufficient water, sanitation, good quality housing, access to health care, secure livelihoods and in many, basic civil and political rights."

It is clear therefore that the importance of sustainable development in cities lies beyond the protection of the environment and natural resources from the harmful effects of human activities. It goes further to embrace social and moral concerns including equity and quality of life. For sustainable development to be successful, it must be planned for and worked for in its own right (Roberts, 1994). This necessitates that it becomes central to the political, economic, production, technological, international and administrative systems (WCED, 1987, cited in Elliott, 1994), and accepted as a major part of the responsibility of governments and development agencies at all levels (Roberts, 1994). The explicit inclusion of environmental considerations in the planning process, is a prerequisite for successful sustainable development.

3.3.2 Indicators and measurement of sustainable development

3.3.2.1 The Ecological Footprint

William Rees (1992) points to the possible contradictions between global and local ecological sustainability. The goals of sustainable development (i.e. high quality living environments and protection of local systems) by cities in the North are met at the cost of drawing heavily on the environmental capital of other regions or nations, and on the global sink. All industrial regions, and even whole countries, are dependent on resources, and hence large land areas beyond their geographic boundaries, for their sustenance. It follows therefore that cities cannot be regarded as geographically discrete places, as most of the land "occupied" by their residents lies far beyond their borders. Rees (1992) describes the total area of land required to sustain an urban region as the city's "ecological footprint". Rees (1994) defines the "ecological footprint" as "the corresponding area of productive

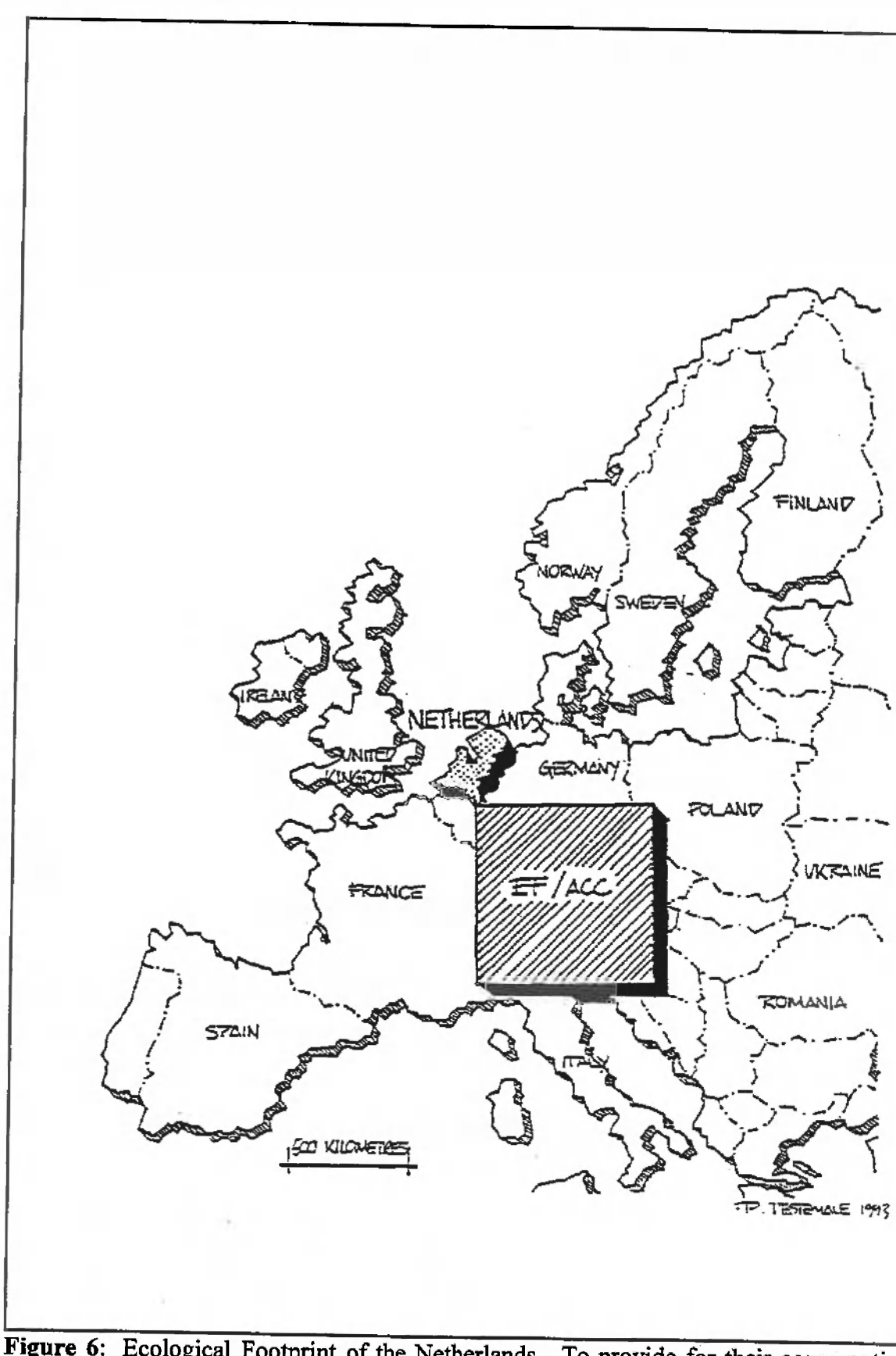


Figure 6: Ecological Footprint of the Netherlands. To provide for their consumption, its people use an area 14 times larger than their country. (Source: Rees, 1992)

land/water required to support the defined economy or population (ie. to produce its resource needs and assimilate its wastes) at a specified material standard of living, wherever on Earth that land may be located." Typically, the ecological footprint of an area is at least an order of magnitude greater than that contained within the municipal boundaries or the associated built up area. The Netherlands. for example, requires an area fourteen times its size to provide for its consumption (Figure 6).

The ecological footprint of a city is dependent on trade and natural flows of ecological goods and services. The natural resources of distant "elsewheres" are appropriated, creating dependencies that may not be ecologically or geopolitically stable or secure (Rees, 1992). Wealthier nations therefore have the ability to (and indeed do) appropriate more than their fair share of the planet's carrying capacity. This results in competition between the North and the South for the remaining stocks of natural capital. The North's productive capacity has resulted in the environment-development related tension that currently exists between the North and the South (Rees, 1992). It can therefore be concluded that in order to achieve sustainable development globally, international agreements are needed which set limits for each national society's consumption of resources and use of global sinks for their wastes. Rees (1992) recognises that such macro-ecological realities are often invisible to conventional economic analyses, yet have serious implications for world development and sustainability.

3.3.2.2 Environmental Economics

Conventional economic analysts deny that there are biophysical limits to economic expansion and hence implicitly assume that the carrying capacity of the Earth is infinitely expandable. However, Rees (1992:2) points out that ecological economists by contrast, interpret the impending convergence of the economy with the ecosphere as "implying a new type of constraint on at least the material growth." Ozone depletion, atmospheric and incipient climate change, deforestation, soil degradation, and the loss of biodiversity, are all accumulation symptoms of global degradation which indicate that the growth in energy and material throughput of the world economy cannot be sustained.

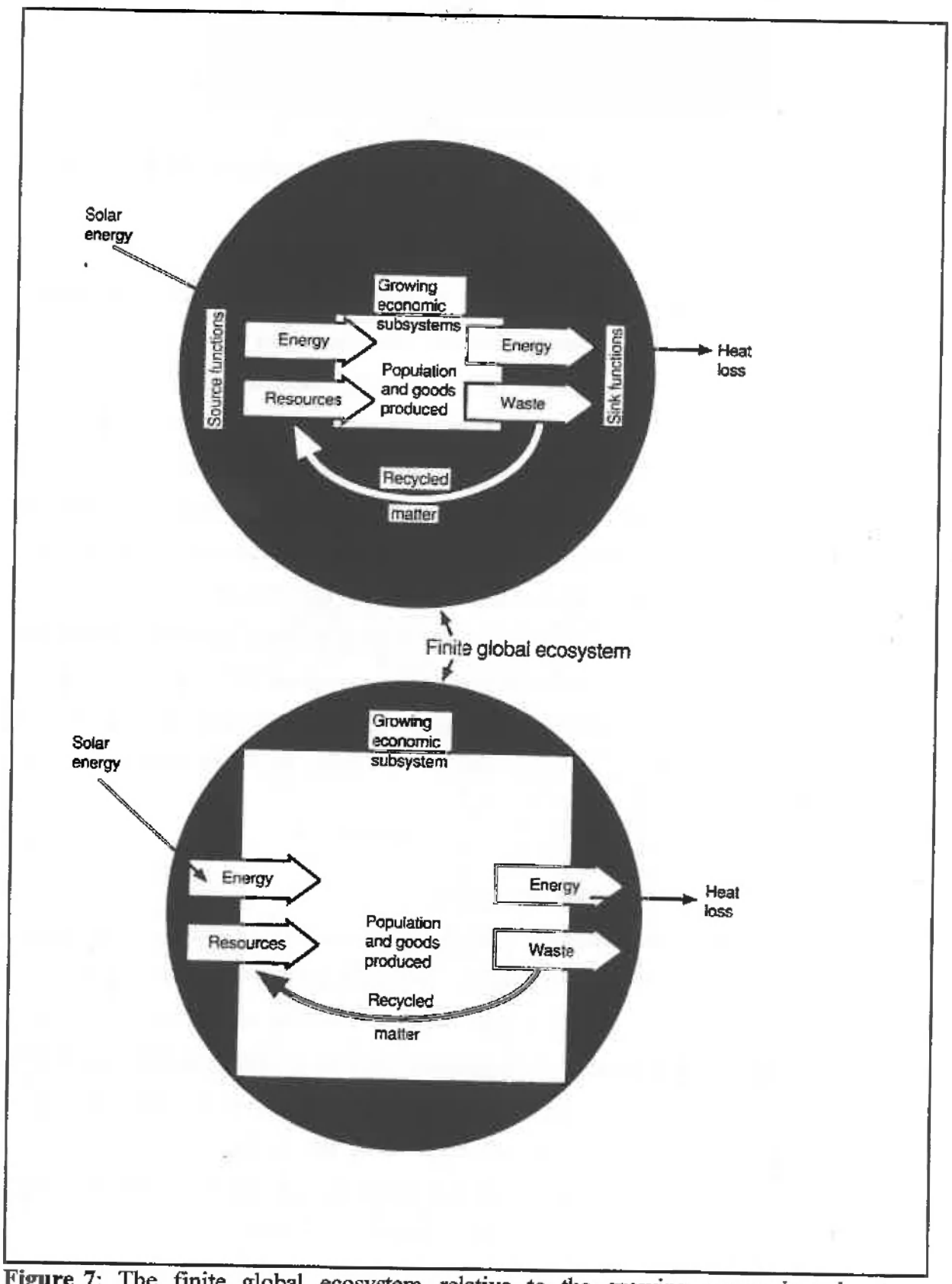


Figure 7: The finite global ecosystem relative to the growing economic subsystem. (Source: Goodland, 1991 cited in Bartelmus, 1994).

Within mainstream (neoclassical) economics, the economy is regarded as a mechanical, self-regulating and self-sustaining, independent system, whose output is circular, and self-feeding (Heilbroner, 1981, cited in Rees, 1992:1). Money is the metric within this framework, and the circular flow of exchange value is the starting point for analysis. The problem with this paradigm, however, is the fact that it does not make reference to the through flows of energy and material needed to sustain the cycles of production and consumption (Figure 7). In addition, most mainstream economists place great confidence in price as an indicator of scarcity and on the mechanics of the marketplace to relieve it. From this perspective, the depletion of a resource base is simply compensated for by raising the price of the scarce resource, which automatically leads to its conservation and the search for an alternative. This technocentric worldview can therefore be seen to be substituting natural capital with manufactured capital (Rees, 1994).

Ecological economists maintain that it is the very assumptions and beliefs of mainstream economics that are responsible for, or at least aggravate, the sustainability crisis. Ecologists see the economy as being an integrated, contained and dependent subsystem of the non-growing and materially closed ecosphere. Within this framework, the flows are not circular flows of money, but rather the unidirectional and irreversible flows of useful matter and energy from the ecosphere, through the economic subsystem and back to the ecosphere in degraded form (Rees, 1994). Ecological economics makes it clear that the continuous growth in the energy and material throughput of the human economy threatens the stability of the ecosphere at both ends of the thermodynamic stream: excessive input results in natural capital depletion, excessive output fills waste sinks to over-flowing (Rees, 1994). The term "natural capital" refers to a "stock of natural assets that yields a flow of valuable goods and services into the future" (Rees, 1994). An ecological analysis argues for limits on the quantitative growth of material flows. Therefore, by the time the economy has reached the maximum sustainable level of material throughput, flow rates should be held constant or in "steady-state". Rees (1994:3) translates this into economic terms as follows, "growth in national product (and national income) are ultimately constrained by the sustainable flow of ecological goods and services (natural income)". The ecological perspective also questions the validity of scarcity indicators used in conventional economics such as prices, costs and profits, for the following reasons as outlined by Rees (1994:3):

> "they do not reflect the size of the corresponding natural capital stocks, whether there are critical minimal levels below which stocks can no longer replenish themselves, the functional roles of such stocks in relevant ecosystems, or their ultimate value in sustaining life".

Vatn and Bromley (1993) sum this up when they comment that when market prices fail to convey vital information they lose any legitimacy to the claim that they foster economically efficient decisions (cited in Rees, 1994:3).

Approaches to global sustainability within the present economic paradigm are based on large increases in economic growth and consumption both to alleviate poverty and to produce the monetary wealth needed to better care for the environment. According to Rees (1994), The Brundtland Commission suggested a five- to ten-fold expansion of industrial activity would be necessary to raise twice the present world population to European material standards by the middle of the next century. Using the ecological footprint analysis, Rees (1994) estimates that several additional planet earths would be required to achieve this goal assuming prevailing material values and the technologies most likely to be available under present economic assumptions.

From an ecological-economics point of view then, typical urban development policies need to take into account the fact that the city's role in wealth creation is invariably dependent on the continuous production of ecological goods and services somewhere else. The resource base must therefore grow as the city grows. The ecological perspective also highlights the connection between the pollution problems of the Northern cities, and the poverty and material deprivation of the Southern cities. Much of the North's wealth is derived from the exploitation of the natural capital and environmental degradation of the South. Furthermore, the restructuring of rural economies of the South to supply the North results in increasing rates of urbanisation and exacerbates local ecological decay (Rees, 1992:128). Current development models that favour net transfers of wealth to the North clearly have to be challenged in order to prevent permanent poverty and ecological decline in the South.

3.4 ENVIRONMENTAL PROBLEMS IN THIRD WORLD CITIES

Typically, cities play a key role in the development process, making a large contribution to national economic growth. However, cities of the Third World are often unhealthy, inefficient, and inequitable, resulting in cities being less productive than they should be. Unlike cities of the First World, the most serious environmental problems in terms of present impact on human health have little to do with levels of resource consumption, but usually have far more to do with government failure to provide basic environmental infrastructure and services (Bartone, 1991; Hardoy and Satterthwaite, 1991).

The increasing number of people, cars and industrial activities in cities result in a significant strain on natural resources, the environmental consequences of which translate into direct negative impacts on human health, the quality of life, the productivity of the city, and the surrounding ecosystems (Bartone, 1991). Other environmental problems typically suffered by third world cities include air pollution in cities with poor dispersion climates, poor urban drainage, traffic congestion, noise and overcrowding. A serious consequence of environmental degradation in these areas is the threat to the long term availability and quality of natural capital supplies.

It is the poor, women and children who are most vulnerable to ill-health and other negative impacts of environmental problems. Homes and neighbourhoods of the poor are the worst served with water, sanitation, garbage collection, paved roads and drains (Hardoy and Satterthwaithe, 1991). In addition, the poor must often pay higher prices for food, shelter, and essential services. According to Bartone (1991), foremost for the poor are health problems resulting from a substandard living environment that does not protect them from human excreta and other wastes, indoor air pollution, or vulnerability to natural disasters. The main environmental priorities for the poor then are improved housing and the affordable provision of basic water supply and sanitation services.

A further characteristic of Third World cities as identified by Hardoy and Satterthwaite (1991) is that very few governments or aid agencies give much attention to cities' environmental problems - especially the problems which impact most on the health and livelihoods of poorer groups. Deficiencies in water supply and sanitation, housing and the

provision of health care are responsible for tens of millions of preventable deaths each year. They also contribute to serious ill-health or disablement for hundreds of millions and should accordingly rank as environmental problems which deserve a high priority for cities.

Local Agenda 21, the international initiative for sustainable cities, identifies the long-term solution to any city's environmental problems as being dependent on the development within that city of a representative local government. As each city has its own unique set of problems, it makes sense that local problems should be tackled by local institutions. However, it can be argued that certain local authorities may lack the capacity to deal with the enormity of their local environmental problems which may in fact be of national concern and origin. Hardoy and Satterthwaithe (1991:356) add that "the fact that capital is limited actually demands a more profound knowledge of the nature of environmental problems and their cause, to allow limited resources to be used to best effect." Local authorities should hence get the support, in terms of capacity and fiscally, from national government in order for local initiatives to succeed.

Another significant issue to consider is that most Third World nations cannot follow the growth path taken by Northern and First World nations, due largely to the obvious differences in the levels of wealth and prosperity. Hardoy and Satterthwaite (1991:356) cite three other significant differences:

1) unlike the North most Third World economies, employment patterns and foreign exchange earnings are dependent on natural resource exploitation;
2) virtually all Third World nations lack the institutions and the infrastructure on which to base effective actions to address urban environmental problems;
3) there are also important differences in the nature of government, as many Third World nations do not have representative governments.

Finally, the environmental issues that dominate discussions in the First World about the Third World are not the environmental issues which pose the most serious threats to most Third World citizens' health and well being. Most Third World citizens find it difficult to share the concerns of the North on global warming as questions of survival 20 or more years into the future often have little relevance to those concerned with survival today. In

addition, the South views the North's concern for the environment with suspicion, as a concern for the environment was seen by many as "a way through which the North could limit the competitiveness of Southern economies in the world market" (Hardoy and Satterthwaite, 1991:358). In addition, the continued stress by groups in the North on the links between environmental degradation and "over-population", where the South was seen as the guilty party, is also divisive when, in actual fact, it is the consumption patterns of the North which have the largest ecological footprints and which result in most of the environmental degradation (Mitlin, 1992).

Hardoy and Satterthwaite (1991) stress that a joint programme to address environmental problems must have the long-term goal of building capacity within each Third World society to identify, analyse and act on their own environmental problems. In order to attain this however, a degree of international responsibility is required. Such issues as impossible debt repayment levels and the removal of protectionist barriers around the North's own markets need to be addressed.

3.5 SUSTAINABLE DEVELOPMENT AND THE SOUTH AFRICAN CITY

Historically, the management of South African cities has been driven by the ideology of "separate development" rather than by a concern to create a healthy, viable urban environment (Ramphele, 1991), which has resulted in inefficient city functioning. The legacy of this policy is the core of the urban environmental crisis in South Africa. However, despite the apparatus of influx control and apartheid ideology, it has been shown that the remaking of cities was begun as far back as the 1960s by the voteless informal settlers (Rogerson, 1992). With a growing need for accessibility to urban areas for employment and other reasons, South African cities have witnessed an unprecedented increase in the number of squatting and informal settlements on the urban fringe. Informal settlements, together with trends of suburbanisation have resulted in the fragmentation and sprawling of the city, which in turn increases the strain on the natural environment. Furthermore, the greatest urban explosion is occurring amongst the poorest people, resulting in high and increasing levels of poverty, unemployment and inequality within the cities (Ramphele, 1991). The inadequacy of the government's response to the needs of the

growing urban population is having consequences both on the health of the people and on the long term integrity of the environment (Cock, 1991).

The Reconstruction and Development Programme (1994) for post-apartheid South Africa stresses that sustainable urbanisation must be part of the process of post apartheid reconstruction. The first of the RDP's six basic principles is that the programme be "integrated and sustainable" (ANC, 1994:4). Furthermore, Section 2.10 of the RDP deals specifically with the environment as a basic need of the people of South Africa. Within this section, item 2.10.4 states that:

> "Development strategies must incorporate environmental consequences in the course of planning. Measures such as land reform, provision of basic infrastructure, housing and targeted rural assistance (including extension services), and the maintenance of food security should ultimately reduce pressure on the natural environment."

By adopting the aims of the RDP as a guideline for policy, the Government of National Unity has thereby committed themselves in principle to using the resource base upon which South African society depends sustainably, as well as promoting the development and upliftment of society.

3.5.1 The Key Issues for South African Urban Sustainable Development

In common with the situation in most developing countries, the most immediate and critical environmental problems in South Africa's cities fall under the "brown agenda". These include a lack of reliable energy supplies; lack of safe water; inadequate waste management and pollution control; accidents linked to congestion and crowding; and the occupation and degradation of sensitive lands. Although these issues are interrelated, and should hence be tackled in an interrelated fashion, they are documented individually in the interests of clarity.

The issues dealt with below do not by any means form a complete list of environmental problems encountered in the urban areas of South Africa. Rather, they dealt with below deal with the immediate physical conditions in which people find themselves. As such they do not reflect concerns for safety and stability, gender inequality, forms of governance in

local authorities and other issues that have a direct bearing on the quality of people's lives, and hence sustainability in urban areas.

3.5.1.1 Urban Shelter and Land

The question of shelter for the poor is undoubtedly the most visible pressure point on South Africa's urban policy agenda. One legacy of housing policy under the apartheid regime is the existence of an enormous and acute housing backlog, especially in the black communities. The extent of the shortfall is estimated at about 1.3 million to 3 million housing units (Yach, 1994). This immediate crisis of housing delivery is exacerbated by the rapid rates of population growth occurring in low income communities, resulting in severe overcrowding and burgeoning informal settlements. Profiles of informal settlers show that the inhabitants of these areas are not made up of concentrations of rural migrants. Instead, their populations are mostly long-standing urban dwellers who have been forced to live in shacks because of the shortage in housing and their own poverty (Rogerson, 1992).

The critical point in sustainable urban development is the availability of land for the provision of housing. South African cities are typically sprawling, fragmented, and of a low density, which adds to the difficulty of securing land. The urbanising poor are therefore often relegated to marginal urban lands. In some cases, poor communities such as those in Durban, have responded to their need for shelter by fostering land invasions, which represent a dramatic illustration of past policy and administrative failure as regards making land available for the urban poor in South Africa.

At the heart of the insecurity experienced by black South Africans is the lack of access to affordable urban land. Apartheid policies have vehemently prevented formal black urbanisation in the past. Presently, a system of economic apartheid serves to prevent low income communities, particularly women, from gaining formal access to urban land. However, the Government of National Unity's land reform programme recognises the specific difficulties women face in obtaining land. With a growing number of female headed households, security of tenure and access to services for women will serve to increase the health status of the entire family (Lund and Patel, 1995). This will have the

effect of positively influencing the quality of life of the urban poor, as well as the overall sustainability of the city.

3.5.1.2 Water and Sanitation

South Africa is a fairly dry country, with rainfall below the world average (Ramphele, 1991). The overall South African demand is predicted to outstrip the conventional sources of water supply by the year 2020 (Weaver, 1990 cited in Ramphele, 1991). The provision of sufficient and safe water and sanitation services are associated with dramatic decreases in death from diarrhoeal diseases as well as skin and other infectious diseases (Lund and Patel, 1995). The negative environmental health consequences associated with inadequate supplies necessitate an improvement in water and sanitation provision for the urban poor. However, in view of the likely shortfall of conventional supplies, the sustainable utilisation of water should be recognised as an issue of high priority in South Africa.

Rogerson (1992) quotes a recent national investigation that disclosed that out of a current national urban population totalling 22 million, 4 million people (18 %) lack even the most basic type of water connection. In addition to access to water, water quality should also be considered a priority issue for sustainable urbanisation. A fundamental principle of the water resources policy is the right to access to clean water - "water security for all" (ANC, 1994). In order to improve overall quality of life, the provision of safe drinking water must occur simultaneously with improved hygiene education (Lund and Patel, 1995).

The potential threat to water quality stems from four sources. The first is industrial. Unscrupulous industrialists often dump waste products in rivers, causing extensive ecological damage. According to Ramphele (1991), the problem is most severe in the "homeland" towns, where the desire to attract industry has lead to lax controls. The second source is poor urban land management. Ramphele (1991) cites an example in Cape Town where a solid waste tip was located next to the Swartklip Road on the Cape Flats, in a natural depression identified in 1980 as a prime site through which to recharge the Cape Flats aquifer. The high incidence of squatting on the urban fringes of most South African cities poses the third serious threat. When urban water supplies are not provided, people naturally gravitate towards natural water sources. When sewerage facilities are inadequate,

chronic pollution quickly occurs, which has negative health implications. The poor management of sewerage and stormwater run-off poses the fourth threat to the quality of water. Because little attention is paid to the re-use of water, almost all purified effluent is released into the water courses and the sea. For public health, the management of urban stormwater run-off is almost as important as that of sewerage effluent (Ramphele, 1991). The first flush of stormwater following heavy rain picks up many impurities from urban surfaces and carries them into rivers, vleis and the coastal zone. While legislation exists to enforce the purification of sewerage, there are no equivalent controls over the quality of storm water effluent (Gasson, 1990 cited in Ramphele, 1991).

3.5.1.3 Air pollution and Electrification

Urban air pollution is already a serious problem in and around South African cities. Two types of air pollution in cities must be distinguished: outdoor and indoor. There are three main sources of air pollution in South African cities. One is the inefficient control over industrial emissions. The second is the extensive domestic use of wood, paraffin and coal for heating and cooking purposes. If clean energy sources are unavailable or too expensive, people have no option but to use coal fires. The burning of fuels is inefficient and unhealthy, resulting in respiratory problems, especially amongst the young and elderly (Lund and Patel, 1995). The third cause is emissions from motor cars, which constitute the largest source of air pollution in all major cities (Rogerson, 1992).

South Africa is presently engaged in an accelerated national electrification process, which is designed to ensure access to electricity for 2.5 million homes by the end of the century (Lund and Patel, 1995). It is estimated that this process will accrue a saving of over R800 million within the health sector, mainly related to reductions in respiratory diseases, burns and paraffin poisoning (Lund and Patel, 1995).

The question of extending electrification services into low-income settlements, is a vital aspect for sustaining future urbanisation, reducing the air pollution levels, and increasing the quality of life of the urban poor. However, it is no use providing an area with electricity if the people cannot afford to use it. Supplementary systems need to be created which enable people to choose according to their own priorities and circumstances

(Ramphele, 1991). As far as possible, the use of renewable energy technologies including solar, wind and hydro power should be encouraged.

3.5.1.4 Natural Habitats and Biodiversity

The natural vegetation in South African cities is being increasingly destroyed. Immense areas of ecologically significant open space are cleared for persistent lateral growth. In addition, in the absence of energy or building materials, the natural environment is utilised. The importance of open spaces lies beyond their recreational significance, as they also treat air and water pollution, absorb rainfall, prevent flooding and soil erosion, reduce noise levels and ensure the preservation of important indigenous plant and animal communities (Roberts, 1994).

Nature must be used in a managed and multi-functional way. Ramphele (1991) suggests the use of public land for small-scale urban agriculture. Further, on a large-scale, the creation of urban woodlots can serve as windbreaks, supplement energy and building materials, play an important part in low-cost, water-efficient sewerage systems, and provide places of recreation.

The creation of public spaces in low income areas goes far beyond aesthetics. The assumption behind the construction of housing estates - that almost all a family's needs can be met within the individual house - simply does not hold when people are poor (Ramphele, 1991). Public spaces are of vital importance, as they act as extensions of the private dwelling unit.

3.5.1.5 Solid Waste Management

The sustainability of South African cities depends also on the extent to which wastes generated are recycled, re-used or treated and disposed of. The planning and development of South African cities must take cognisance of the need to foster new approaches to waste management, developing opportunities wherever practicable for the development and support of small industries associated with the recycling of glass, cardboard, paper and plastics, and the composting of organic wastes (Roberts, 1994).

3.6 LOCAL AGENDA 21 - THE WAY FORWARD

The adoption of Agenda 21 at the Earth Summit (1992) has provided an international vehicle for the inclusion of sustainable development initiatives in cities. During the summit, 179 heads of state adopted Agenda 21, which in the words of the introduction, is a document intended as

> "an action plan for the 1990s and well into the twenty-first century elaborating strategies and integrated programme measures to halt and reverse the effects of environmental degradation and to promote environmentally sound and sustainable development in all countries".

As the roots of most of the problems being addressed by Agenda 21 have their roots in local activities, it was recognised that the participation and co-operation of local authorities is a critical determining factor in fulfilling the objectives of Agenda 21 (Roberts, 1994). Chapter 28 of Agenda 21 calls on local authorities to draw up Local Agenda 21 plans in consultation and partnership with the local communities.

The recognition of the importance of the involvement of local authorities led to the directive that "by 1996, most local authorities in each country should have undertaken a consultative process with their populations and achieved a consensus on a 'local Agenda 21' for the community." (Roberts, 1994). Local Agenda 21 therefore requires that each local authority collaborate with its citizens, local organisations and private enterprises, in the preparation and adoption of a plan to secure sustainable development within the city. This plan should represent a comprehensive action strategy for sustainable development in each locality which will serve to direct local programmes and policies (van der Merwe, 1994).

Most cities around the world have begun working on Local Agenda 21. Their proposals will be submitted to the United Nations' Commission on Sustainable Development (Habitat II) to be held in Istanbul in 1996. To assist local governments, the International Council for Local Environmental Initiatives (ICLEI) announced the Local Agenda 21 Initiative at the Earth Summit in 1992, which is aimed at establishing ongoing, local sustainable development initiatives. The project is in turn divided into two separate programmes, each with a different focus.

Under the Local Agenda 21 initiative, the ICLEI serves to facilitate the exchange of experiences and to address specific planning issues on a case-by-case basis (van der Merwe, 1994). As part of this initiative, The Local Agenda 21 Communities Network, a network of local governments and their partners (eg. communities, civics etc) that undertake sustainable development planning programmes has been established.

The Local Agenda 21 Model Communities Program is research orientated, aimed at developing tools and models of sustainable development planning. Under this programme, ICLEI is committed to working intensively with a group of up to 21 selected municipalities worldwide to design, test and evaluate their planning approaches over a period of three years (van der Merwe, 1994). Ten municipalities would be selected from countries of the Third World, including Latin America, Asia, Africa, and the Middle East. Cities that are willing to participate in the programme have been visited since May 1994 by Jeb Brugmann (general secretary of ICLEI), Prathiba Metha (project Director) and Richard Woods (field manager). According to van der Merwe (1994), team members met with municipal officials, community organisations, research institutions, non-governmental organisations, business leaders and other interested groups to determine whether the programme would meet the needs of the community and whether the municipality was prepared to dedicate the required resources to participate in the programme for a three year period.

Following on from the selection process, three regional Local Agenda 21 workshops are to be held. With the assistance of ICLEI team members, selected cities in a specified region will develop sustainable development planning processes suited to local needs. Issues such as community participation, target setting, monitoring and reporting will be addressed at these workshops. Following the regional workshops, a city-level workshop in each municipal area will be held.

African and Middle East cities were selected in October and November 1994, and a regional workshop will be held in 1995. The South African cities that placed a bid for the Local Agenda 21 Model Communities Programme included Durban and Cape Town. Durban was visited by Jeb Brugmann between the 20 and 23 October 1994. As only three African cities will be selected for this programme, competition was intense. Durban, with

its combination of environmental and social instability was selected as a model community for Africa. The Environmental Manager for Durban, Dr. Debra Roberts recognises the importance of Durban being selected as a model community, as the city is highly unstable and has insufficient environmental capacity and support. However, work on Local Agenda 21 should commence in other South African cities, irrespective of the ICLEI projects, as global sustainability is dependent on local level sustainability.

Durban's commitment to environmental sustainability has also resulted in it being chosen as one of 15 cities world wide (and the only city in Africa) that will be presented as a Local Agenda 21 case study to the United Nations Commission on Sustainable Development in New York in July 1995. Taking its lead from the Local Agenda 21 mandate and the Reconstruction and Development Programme (RDP), the City of Durban is currently working towards the preparation of an environment and development strategy, charter and action programme for the Greater Durban Metropolitan Area viz. "*The State of the Environment and Development Report*". It is envisaged that this report will be completed by the end of October 1995, so that the new Local Government has an environment/development baseline within which to frame future development projects.

The next chapter introduces the case study of Cato Manor, which is an example of an inner city development project for low income communities. A critique of the development process in Cato Manor will serve to assess the Government of National Unity's and Durban's commitment towards sustainable development, especially in the light of it's part in the Local Agenda 21 initiative. Low income housing projects have typically been unsustainable in South Africa, as they have been located at great distances from urban centres, and often adjacent to negative externalities. A major development need in south Africa is the development of urban low income housing, which is likely to shape the urban environment for a long time to come. The application of a sustainable development framework in the case study of Cato Manor, with a sensitivity towards "brown agenda" environmental issues could serve to positively influence the reconstruction of South African cities.

Chapter 4

TOWARDS THE RE-DEVELOPMENT OF CATO MANOR: A BRIEF HISTORY

4.1 INTRODUCTION

The history of the Greater Cato Manor area epitomises the history of the development of the city of Durban which, according to Day and Chetty (1993), has been a turbulent one characterised by instances of comprehensive social and spatial intervention and instances of oversight and neglect. Edwards (1994) describes Cato Manor as having the most complex and violently contested history of land ownership and occupation of any area in Durban. Since the beginning of the Apartheid Era, Cato Manor - now described by observers as the largest tract of undeveloped prime urban land in the world - lay dormant (Makhathini, 1993). In contrast the remainder of metropolitan Durban has continued to grow at a rapid pace. The spatial form that resulted from this rapid growth process was characterised by low density formal development along the coastal and inland axes, and sprawling unplanned settlement on the metropolitan periphery.

As a direct result of apartheid policies, the greatest need for employment, shelter, infrastructure and services lies with the urban poor, the majority of whom are located on the urban periphery (Day and Chetty, 1993). The irony however, is that the opportunities required to address these needs are currently to be found in central Durban. There is clearly a need to re-shape the city, to make these urban opportunities more accessible to the poor. Against the background of planning directions for the new post-apartheid, democratic South African city, the case study of Greater Cato Manor gains significance. The RDP (ANC, 1994) emphasises a commitment towards increasing people's access to housing, jobs and a better quality of life, particularly for the poorer, previously excluded population groups. The re-development of Cato Manor therefore represents one of the first attempts by the government to provide housing and economic opportunities on a democratic basis, on the basis of class, rather than race.

The proximity of Cato Manor to existing industry as well as to national and international communication lines increases the potential for the area to become crucial to Durban's

future socio-economic prosperity. Furthermore, the development of such a large tract of land for housing, and the generation of economic activities within the boundaries of metropolitan Durban, perpetuates the compacting of the city, a concept which is gaining popularity amongst progressive planners and economists (Day and Chetty, 1993). Bernstein and McCarthy (1990:6) reiterate the need for this shift in planning focus when they state that

> "a programme is required to specifically channel new development in every South African city and town away from dispersed and racially divided urban growth patterns, towards more compact, integrated, accessible and productive urban systems".

The Daily News (06.09.1994) describes the re-development of Cato Manor as a "flagship project of South Africa's Reconstruction and Development Programme". The development of Cato Manor has the full support of the Government of National Unity, as it is receiving Presidential funding, and it is accordingly seen as an example for the rest of South Africa. As the RDP specifies that "environmental considerations should be built into all decisions", the development provides an important opportunity for Durban to attempt to include environmental considerations in the urban planning process, and hence to pave the way for future sustainable development initiatives in South Africa. The lessons to be learned from the Cato Manor case study could contribute towards the formulation of environmental policy for South African cities on a national as well as a local level.

This chapter provides a brief history of Cato Manor as a prelude to contemporary planning for the area. The history of the area has been controversial, and has had a significant influence on current planning initiatives.

4.2 THE HISTORY OF CATO MANOR

4.2.1 Cato Manor pre- Group Areas

> "To many thousands of blacks the name Cato Manor has a special emotive ring - for over fifty years, to the African, Indian and Coloured families living side by side as a community, this was home. Yet Cato Manors are not unique in our society. Daily, all over South Africa, settled communities, urban and rural, are forcefully removed from areas of their choice ... In the wake of this phenomenon, community life is being destroyed and wholesale dispossession of this land is taking place ... Compensation is always

> hopelessly inadequate, and resettlement a thoroughly traumatic and costly exercise ... the communities throughout South Africa are continually struggling against removal and resettlement ... And the struggle for Cato Manor is precisely that." (Durban Housing Action Committee, 1982 cited in Maharaj, 1992).

Urban form in South Africa has been historically dictated to both spatially and socially by the system of Apartheid which has resulted in the prohibition of residential development for black population groups in inner cities. The morphology of Durban has been no exception, and here Cato Manor has symbolised the history of the dispossessed in South Africa. The greater Cato Manor Area includes approximately 2000ha of land which is larger than the CBD, beachfront, and residential suburbs from Umbilo to Morningside (Natal Mercury, 06.08.1994). The area is ideally situated at roughly 7-10 km west of Durban's CBD and is also very close to the industrial areas of Durban (see Figure 1). Greater Cato Manor consists of a series of smaller parcels of land (Figure 8) which are distinguished from each other on the basis of administrative control and ownership (Day and Chetty, 1993). The area was originally purchased in 1843 by the first mayor of Durban, George Cato. Cato sold much of his land and on his death the remainder of his land was sold to Whites and "passenger" class Indians. Over the years, Cato Manor developed as a mixed area, occupied mainly by Indians and Africans.

According to Maharaj (1992) many pioneering Indians settled in Cato Manor after the completion of their periods of indenture. The wealthy landowners sold or leased land to the Indians at a profit. The Indians were able to erect substandard dwellings at a low cost due to the fact that Cato Manor was located outside the jurisdiction of the Durban City Council (DCC) at this time. Edwards (1994) notes that landowners came from both a growing middle class professional and trading stratum, and from the Indian working class "who had quickly understood the value of immovable property." The Indians established themselves mainly as fruit farmers and market gardeners. According to Edwards (1994:2)

> "Recollections from both White and Indian residents during this time all give the images of carefully tended vegetable patches, groves of sweetly smelling avocado, mango and pawpaw plantations and the daily early morning clatter of donkey carts carrying produce to the city market."

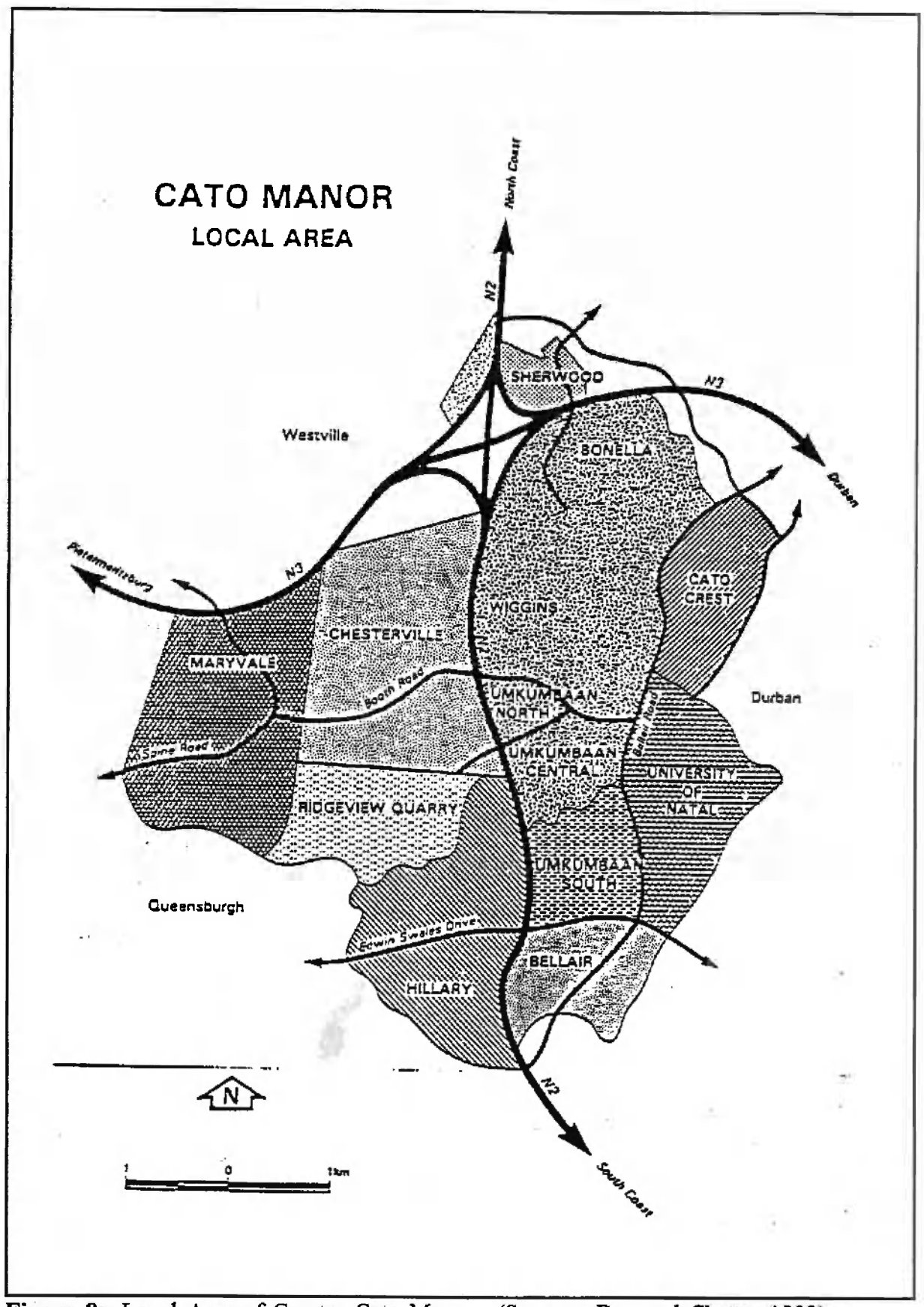


Figure 8: Local Area of Greater Cato Manor. (Source: Day and Chetty, 1993).

Maasdorp and Humphries (1975) note that prior to World War II, this area was one of the main banana producing regions in Natal. Aerial photographs of the area from 1931 bear testimony to the fact that the area was dominated by orchards and other orderly plantations and cultivated lands (Plate 1).

Within this community, wealth lay in the hands of the few, such as lawyers, traders, teachers and priests. As a consequence, only a few people were able to own substantial tracts of land. The fact that Cato Manor was still outside the city boundary, gave the Indian community the freedom to erect places of worship, found schools and sporting and cultural institutions, which contributed towards a growing sense of identity and attachment to place. According to Edwards (1994), from the later nineteenth century through the early decades of the twentieth, racial restrictions over urban residence in Natal were more often directed against Indians than Africans. Cato Manor therefore served as a safe haven for the Indian community.

At this time, isolated clusters of shacks occupied by Africans began to appear. These enclaves of shacks were deliberately situated along the banks of the Umkumbaan River (CMDA, 1994) to allow easy access to water in these unserviced areas. Under the laws of the time, Africans were prohibited from owning land in urban areas, and were hence regarded as "temporary" sojourners, with no access to services. However, as Cato Manor was still outside the boundaries of municipal Durban, the African squatters were left relatively undisturbed (IZWI, May 1995).

The city boundaries were extended in 1932, and Cato Manor became one of the Added Areas incorporated into the Borough of Durban. "By this stage it had been sub-divided and although some whites still owned land in the area on which 'country homes' were built, most of the land was owned by Indians" (Butler-Adam, 1984). According to Edwards (1994), the municipality developed plans for both an economic and sub-economic housing scheme for Indians in the area, but refused to provide any substantial urban infrastructure. This form of housing delivery was typical under the apartheid regime, and was not conducive to fostering sustainable, vibrant, diverse, dynamic neighbourhoods. A further process that had an impact on life in Cato Manor was that during the same period, White

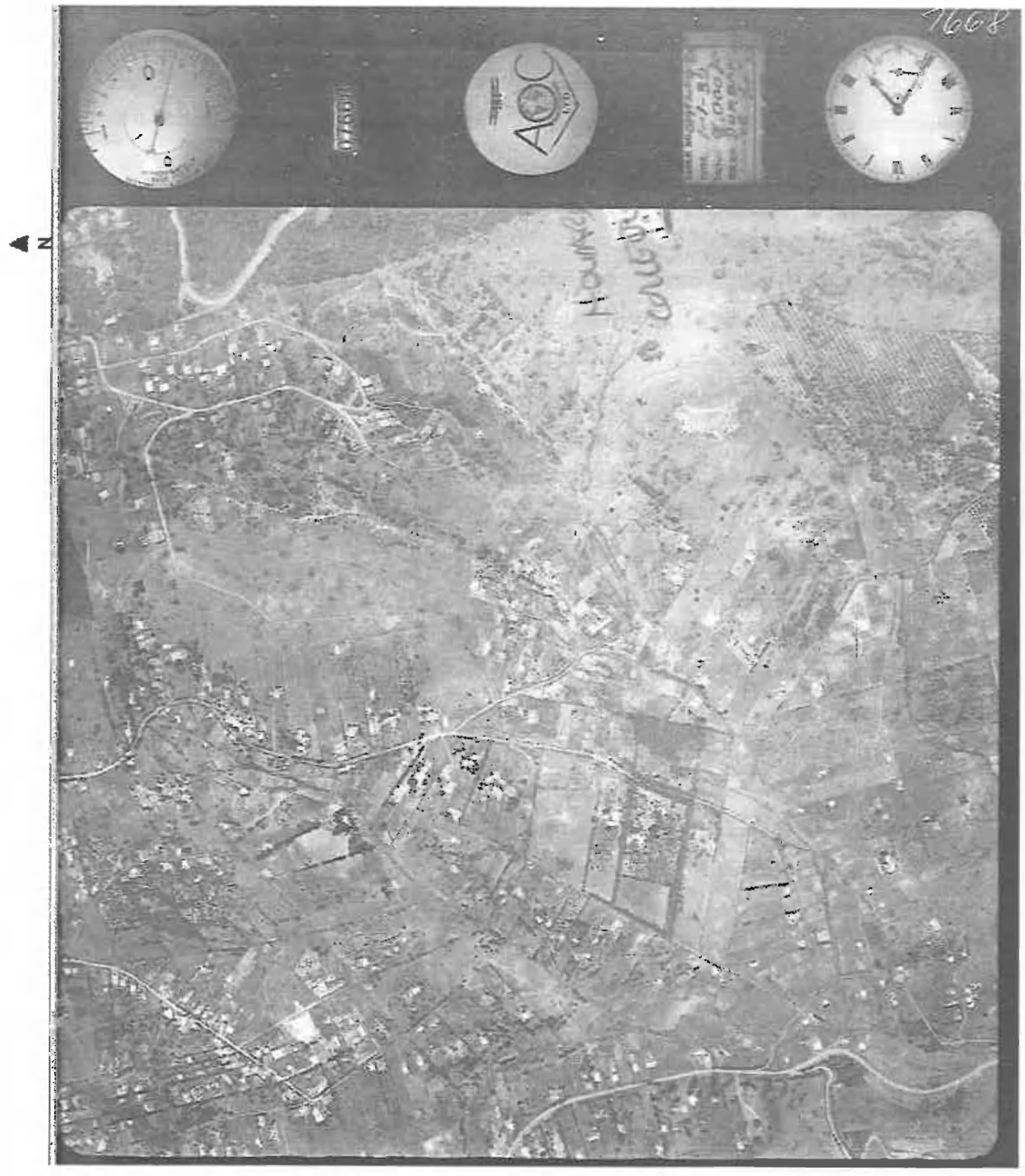


Plate 1: Aerial photo of Cato Manor 1931.

anti-Indian sentiments led to renewed legislation curbing Indian land ownership and commercial activity in the centre of Durban.

With Cato Manor having been incorporated into the municipality of Durban, the shack settlements became illegal. However, the authorities turned a blind eye to this, and the squatter population swelled. The wartime economic expansion resulted in a growing African population in Cato Manor, due largely to the fact that there was an absence of sufficient accommodation for urbanising Africans and the simultaneous temporary suspension of pass laws. Maasdorp and Humphries (1975), note that the Indians realised that it was often more profitable for them to lease their land for shacks to Africans than to use the land for market gardening purposes, hence many of them became "shacklords". This change in land-use served to encourage Indian businessmen to set up shops and bus services in the area (CMDA, 1994). The African tenants would in turn sub-lease to hundreds of other Africans, who would build shacks and pay rent, giving rise to a large class of African "tenant-landlords" who then also had a vested interest in the continued existence of Cato Manor (Maharaj, 1992).

Between the years 1936 and 1943 the population in the area increased from 2 500 persons to 17 000 people. By 1950 the Durban Housing Survey estimated Cato Manor to have 6000 shacks with a population of 45 000 - 50 000 inhabitants (Maasdorp and Humphries, 1975).

By the late 1940s. Cato Manor was shrouded by a highly charged political climate. There was much resistance to attempts by the Durban Corporation to develop large scale plans to both control and restrict African and Indian urban residence and economic authority. According to Edwards (1994), power within African working class politics lay not in formal political movements, but amongst localised community groups, squatter associations, church groups and cultural and sporting bodies. As a result of this political mobilisation, a set of demands arose including: state provision of schools and freehold urban housing, proper residential amenities and commercial trading licenses. The developing shackland society in Cato Manor was drawn into this political fray, within which it became a leading force.

African shack-dwellers also operated "shack shops" in Cato Manor. However, this enterprise was clouded by insecurity due to harassment from the authorities and competition with Indian traders. While the interaction between the Indian petty bourgeois and the shackdwellers was primarily exploitative,

> "Indian traders provided the basic infrastructure of the squatters' slums: the bus services and retail outlets - the services which could be provided because of the particular position of Indian people as a "buffer group" in the racial hierarchy of urban segregation." (Hemson, 1977 cited in Maharaj, 1992).

Despite this, strong anti-Indian feelings festered amongst the Africans. Edwards (1994) notes that as the authority of African shacklords and illegal traders grew, so the *de facto* authority of Indian owners grew less effective. At the same time, the municipality grew increasingly reluctant to enter the area, which resulted in the growth of a variety of illegal commercial activities. By this stage then, the character of Cato Manor was rapidly transforming from being largely a stable Indian community, to a mixed, and largely African area. The differing priorities of the Indians and Africans resulted in the area becoming politically unstable.

The growing tension in the area burst into the open with the 1949 Cato Manor riots. The so-called "Durban riots" broke out following an incident in which a 14 year old African boy was allegedly assaulted by an Indian man near Durban's Indian market (CMDA, 1994). This sparked off two days of anti-Indian violence which spread to Cato Manor, where Indian-owned shops and houses were razed. Most of the Indians fled the area. Edwards (1994) describes Cato Manor as a "killing ground".

> "African shacklands became consolidated in the Mkhumbane area and Africans proclaimed victory. Mkhumbane had been 'liberated from outsiders'. Mkhumbane was 'now ours by right of conquest'. Mkhumbane was 'home'." (Edwards, 1994).

The African shack-dwellers demanded full urban rights in the area. These claims served to pit African shack dwellers directly against both the City Council and Indian landowners, resulting in substantial problems for Durban's African political leadership (Edwards, 1994). The Indian-African tension can not be seen as the sole cause of the riots. At the time it was argued that the frustration and discontent created by living conditions in the African compounds and shack areas was of an explosive nature. The media attributed the riots to the poor socio-economic and housing circumstances of Africans in Durban:

> "When people are ill-housed, packed into congested areas, deprived of proper transport, denied recreational facilities, subjected to political frustration and some degree of economic exploitation, then the ground has been well prepared for terrorist outbreaks." (Daily News, cited in Ladlau, 1975).

Despite the inclusion of the area into the Borough of Durban, it remained a neglected area in terms of services and facilities, resulting in high levels of disease and crime. Cato Manor became known as the "septic fringe" surrounding Durban (Burrows, 1952, cited in Butler-Adam, 1984); "a festering slum where as many people seemed to die from rioting as from disease or crime" (Natal Mercury, 27.06.1986). Conditions in Cato Manor were appalling. There was no electricity or water, and no public health care services. According to the Daily News (31.03.1976), the mortality rate for children was high, with five children under the age of two dying every two days.

Living conditions in Cato Manor were clearly far from satisfactory. The police were particularly concerned about the brewing of illicit liquor and shebeens, important components of the informal economy of Cato Manor. Notwithstanding the poverty and problems, Cato Manor was home to its residents. As *Fighting Talk* (1959 cited in Maharaj, 1992) recorded:

> "People must live! And in the face of the apparent unwillingness or inability to provide decent housing and amenities the people made the best of things. Everything was done to make the shanties habitable and even comfortable as the years went by. Surprisingly elaborate decorations and furniture are to be found in many of the homes at Cato Manor. Hard work had gone into all this and people began to love their homes."

Edwards (1989) notes that the African people living in Cato Manor expressed a strong attachment to the area. He refers to a statement made by Colin Shum (1960) who had a long association with the area and was in close contact with its people. Shum (1960, cited in Edwards, 1989) notes that,

> "...the population feels that Cato Manor is a place they have built themselves. One of the many indications of this is the existence of so many place names which in my opinion seem to indicate an attachment to the area in which they live."

Despite this strong attachment to Cato Manor on the part of the residents, the poor environmental and socio-economic conditions provided the authorities with the opportunity to clear the area of the informal residents in 1950. In terms of the Asiatic Land Tenure Act

(Ghetto Act) of 1946, Cato Manor had been zoned for Indian ownership and occupation. Despite this, Indian tenants also lost their homes and landowners lost their properties in the ensuing removals under the auspices of the Group Areas Act.

4.2.2 Cato Manor under the Apartheid Era

The process of planning both the removal of the shack areas and the future use to which the cleared land was to be put was long and complicated. The riots did not serve to settle anything. Instead they served to reinforce the National Party's decision to restructure African urban life. Local and central state officials recognised that the success of their new housing policy and residential zoning plans for the whole of Durban was dependent on their ability to clear Cato Manor.

In 1950, some City Councillors and the Native Administration Department, whilst recognising that Cato Manor was primarily owned and occupied by Indians, suggested that separate zones for Indians and Africans should be set aside in Cato Manor (Maharaj, 1992). This recommendation was accepted by the Durban City Council who subsequently obtained central state consent to expropriate 450 acres of land in Cato Manor, as well as a loan of 153 000 pounds towards the costs (Maharaj, 1992). Until the Group Areas Act was ratified, Emergency Camps were established as an intermediary strategy to exert control over the shacklands before their final destruction. "However, the Minister of Native Affairs, Dr. Verwoerd, emphasised that the central state would never support permanent African housing in Cato Manor as the area would be zoned white in terms of the Group Areas Act" (Havermann, 1952 cited in Maharaj, 1992). Edwards 1994, describes the effect of the establishment of the Emergency Camp on the relationship between the Indians and Africans as follows:

> "The power of the Indian landowner and African shacklord was to be broken and shack life brought closer to the desired ideal of single nuclear family residence."

African tenants across the whole of Cato Manor were then moved into the Emergency Camp, and were obliged to pay rent to the municipality.

As an alternative, the Durban Corporation obtained 2 261 acres of sugar cane land 18 kms north of Durban for the establishment of an extensive African housing scheme to be known

as KwaMashu (Bekker *et al*, 1992). Other areas, including the S.J. Smith Hostel for single males and the Umlazi Glebeland area, also served as alternative residential areas for Cato Manor residents and other urbanising Africans. Further expansion of Chesterville (part of greater Cato Manor) was disallowed under the Group Areas Act of 1958 which proclaimed the area white and banned all improvement to properties. The removal of informal shack dwellers from Cato Manor to KwaMashu began in 1958 and was completed by August 1965. According to Maasdorp and Humphries (1975) 6 062 shacks in Cato Manor had been cleared and a total of 82 826 persons had been removed by 1965. However, these removals did not occur smoothly, as many Africans refused to leave.

The municipality forced more and more people into the Emergency Camp with no corresponding increase in the provision of services. Overcrowding and poor environmental conditions resulted in a deterioration of health conditions, and by 1957 a typhoid epidemic swept through the shacklands. Tensions during this period were exacerbated by the fact that the municipality commenced with the issuing of pass books, influx control raids and shack demolition. Increasing pass and liquor raids resulted in the Beerhall Riots of 1959. A year later a state of emergency was declared after nine policemen were killed on a liquor raid in the township (Natal Mercury, 27.01.1986). This event tipped the scales against Cato Manor, and the rapid clearance of the entire area began.

In 1963, the government announced that the Indians were to be removed and provided with housing in Chatsworth, approximately 25 km from Durban. Cato Manor was now officially a whites-only area. By 1968, Cato Manor was left largely vacant. All that remained were a few scattered houses, shops, the beerhall, and several Hindu temples (CMDA. 1994).

Goga (1993:50) identifies three major effects that the policy of evictions and expropriations had on the area.

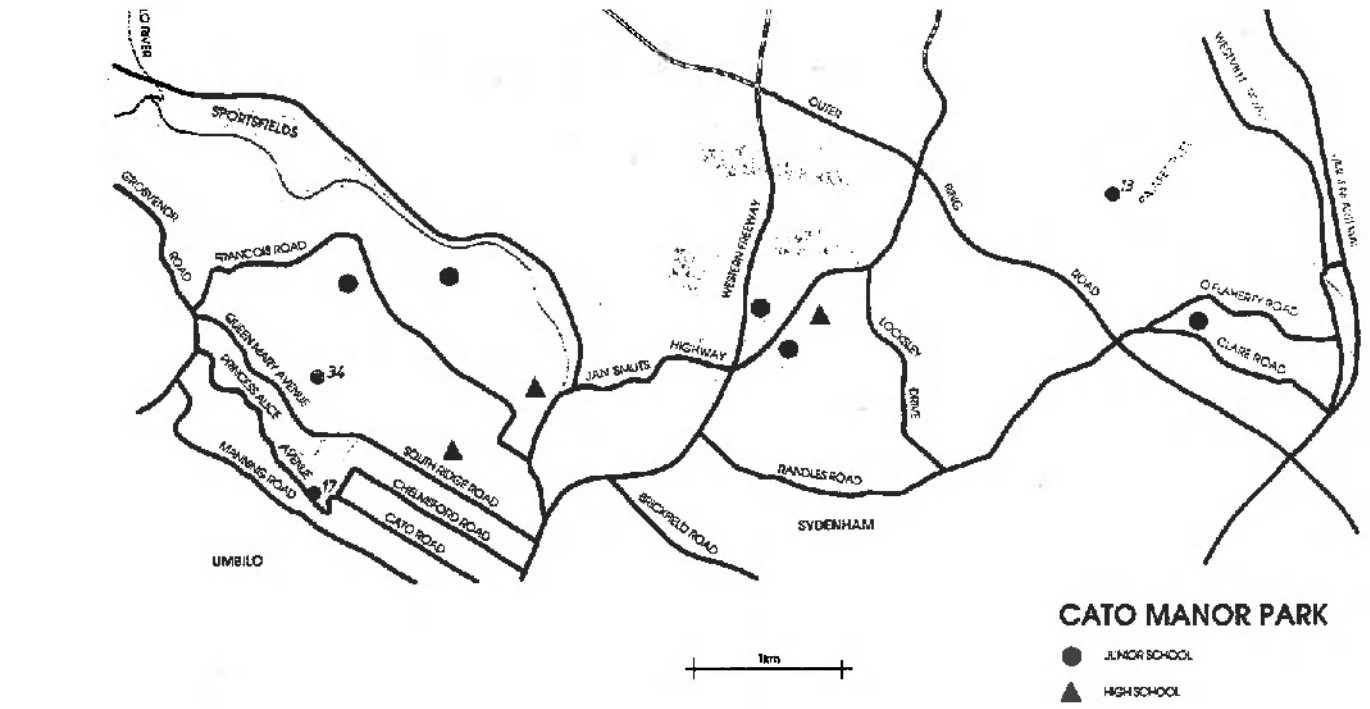
> "At the *social level*, it put an end to a thriving community which for all intents and purposes was a fairly harmonious one... In terms of its effects on the *spatial formation* of the apartheid city, it left a legacy of a massive open space strategically located in the midsts of the city. Finally, examining the problem from a development aspect, it has resulted in a form of *land ownership* that can only be described as a confused mix between different national, regional and local state bodies as well as private owners."

The resulting administrative fragmentation compounded by struggles by previous landowners to regain their land has resulted in a freezing of development in the area.

The clearing of Cato Manor also had a significant environmental effect. Whilst certain more robust plantations including mango and guava bear testimony to the dense and thriving settlement that Cato Manor once was, the majority of the area has reverted to its indigenous, original form. Isolated grassland and wetland communities have rehabilitated themselves, and the majority of the area is dominated by regenerating coastal forest and shrubland complexes. The natural rehabilitation of this area has lead to the Cato Manor Park Open Space System being proclaimed as one of two major units of the Durban Metropolitan Open Space System (D'MOSS) that do not obviously follow a particular river course or coastline (Roberts, 1990). In the D'MOSS Report, Cato Manor Park is described as "a linking park designed to unite the parks in the southern and northern areas into one system." (Figure 9). This "linking" is important in order to ensure floristic continuity across the entire Durban metropolitan landscape. The importance of establishing this viable and effective dispersal corridor gains significance in the light of the present proposed re-development of Cato Manor.

Under the Group Areas Act, sections of Cato Manor closest to the Berea and the University of Natal were developed by the Durban City Council and easily sold to whites, while the university and industrialists grabbed other areas. However, the major portion could not attract white buyers in spite of the low costs. According to Edwards (1994), "Cato Manor's lack of any clear White future effectively negated any substantial White property market interest in investment." This prompted Dr J.N. Reddy, Chairman of the Indian Ministers Council to call for the land to be handed back to Indians. Yet the State was not able to accede to such requests, due to vehement opposition from neighbouring White ratepayer and local authority bodies.

By the late 1970s, the State was still unable to develop a White future for Cato Manor. Whites did not want to live near Indians, and there always seemed to be more suitable areas for privately-owned White suburban residence. As a result, Indians were never all removed from Cato Manor (Edwards, 1994). In 1985, Umkumbaan, Bonella and Wiggins were



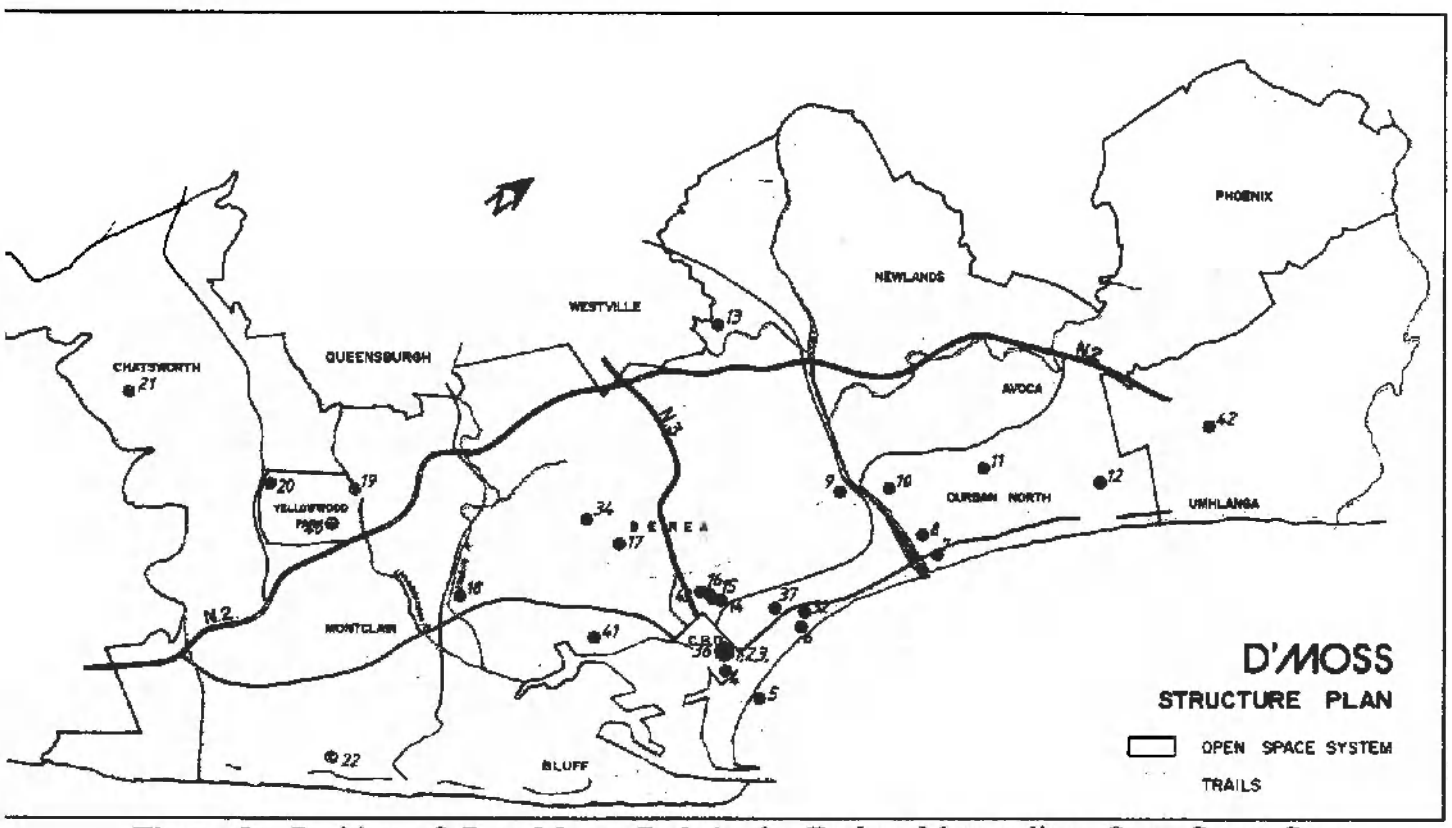


Figure 9: Position of Cato Manor Park in the Durban Metropolitan Open Space Span (D'MOSS).

rezoned for Indian use. However, this land could not easily be built on because of the presence of Ecca Shale which is unstable (Figure 10). In the light of this, Dr Reddy was very keen to ensure that Cato Crest was also zoned for Indian housing.

Around five hundred Indian families who had never been removed lived at the heart of the area that was deproclaimed White. The State as well as certain Indian political and business interests believed that in order to develop the area for Indian housing, these Indian families would have to be evicted and relocated. This decision was met with much opposition, which was mobilised through the newly formed Cato Manor Residents Association (CMRA). The CMRA's main function was to resist further removals and racially-based housing developments.

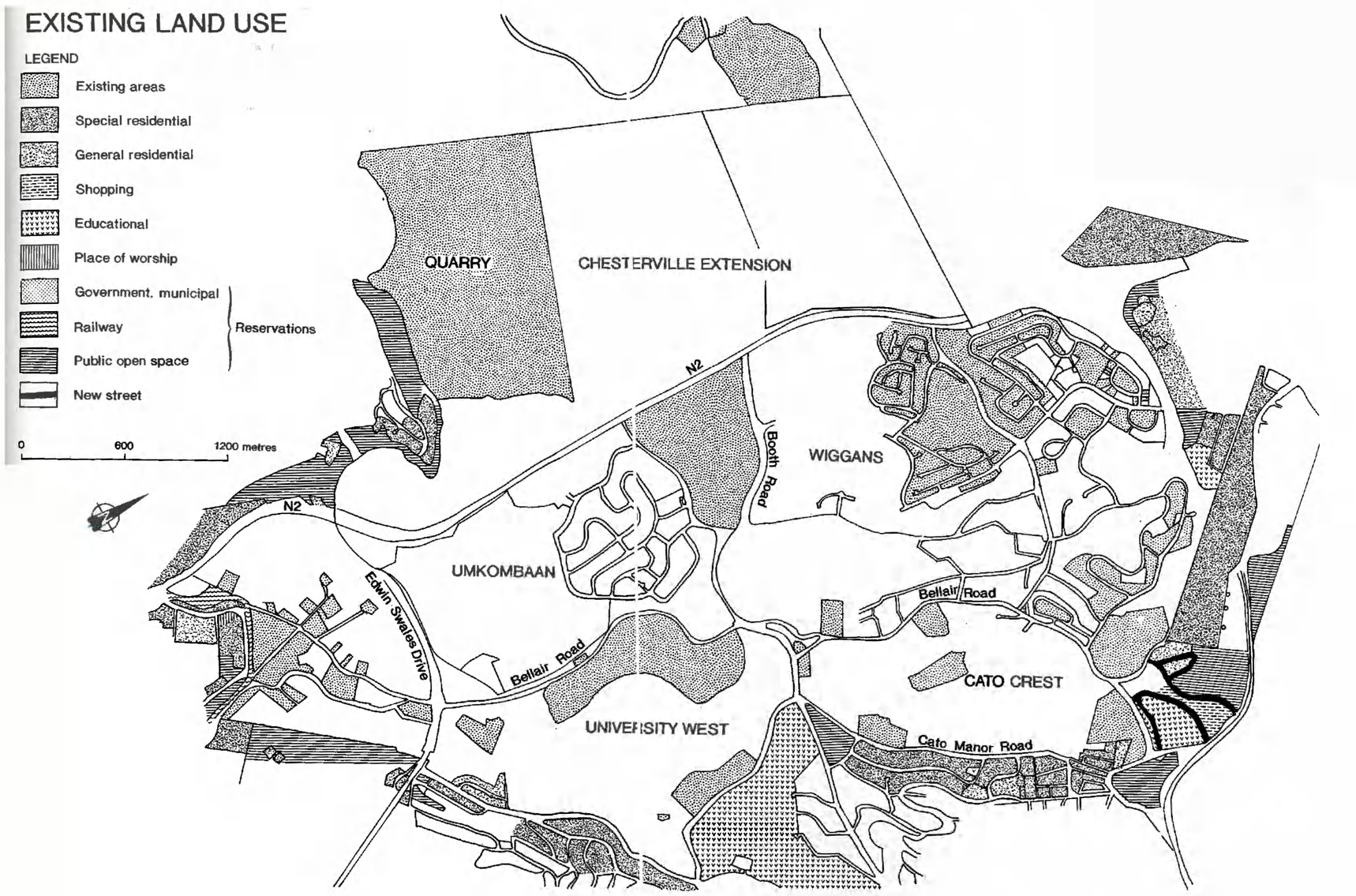
The middle-1980s saw the beginning of the development of this historically resilient core for Indian housing by the House of Delegates at Wiggins (Figure 11). It was as a result of this development that the contemporary politically charged debate around the future of Cato Manor emerged.

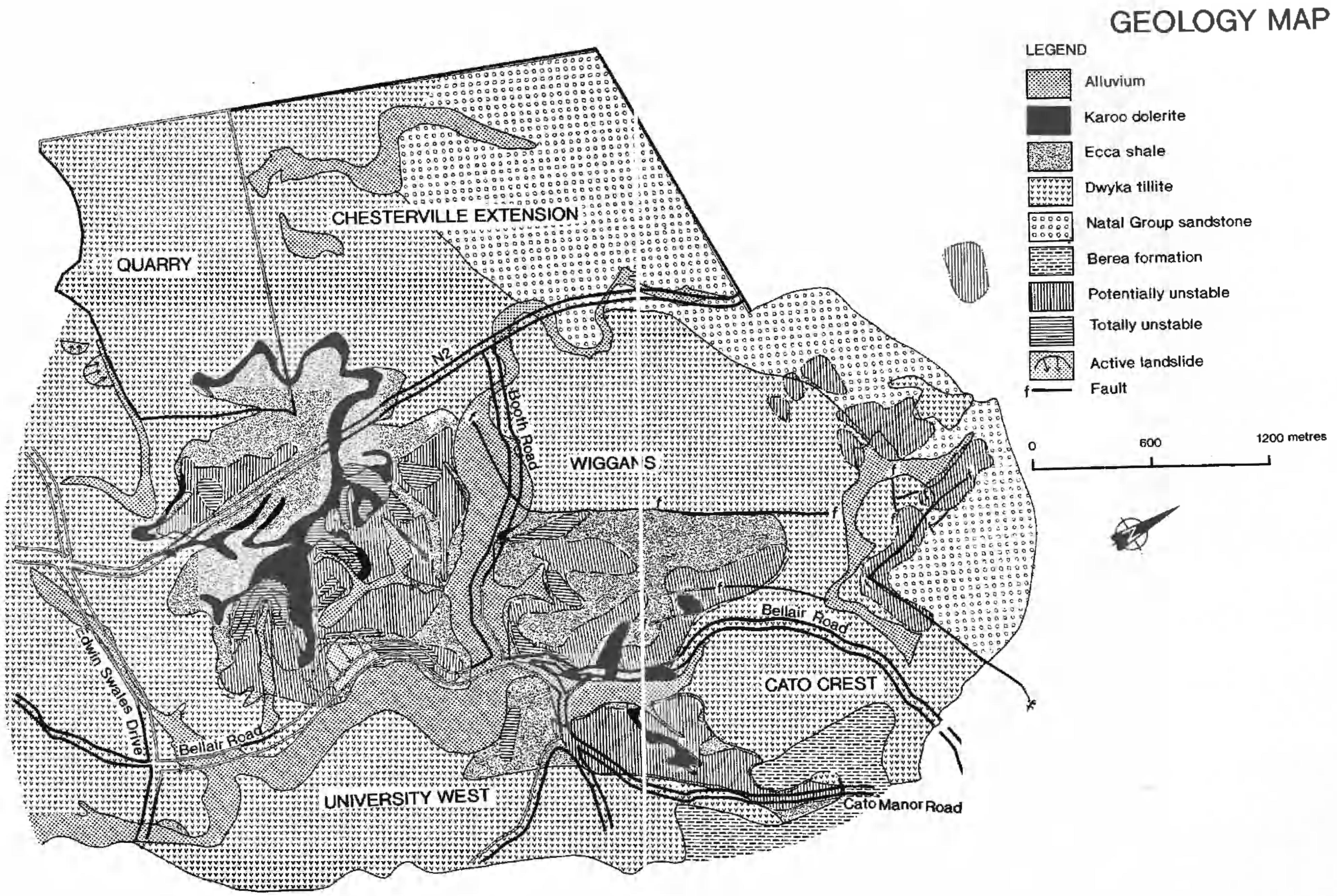
4.2.3 Cato Manor under the Liberalisation Era

By 1987, a small African shack settlement was growing in the Wiggins and Cato Crest areas of Greater Cato Manor. Many squatters moved into the area as a result of increasing violence and overcrowding in shacklands on the outskirts of Durban. In addition, Cato Manor was attractive to shack-dwellers due to the proximity and accessibility of Cato Manor to the city, as well as the fact that it was home to a number of people who had been removed from Cato Manor as a result of the Group Areas Act. Another attractive feature of Cato Manor was that

> "the land is socially unencumbered; the land has not yet acquired the welter of confusing claims of power, obligation, reciprocity and simple and brutal oppression that characterise life in more established but unstable shacklands." (Edwards, 1994).

The disturbance created by the establishment of shack settlements allowed for the introduction of invasive vegetative species, which serve to compete with indigenous species, hence threatening the integrity of the regenerating indigenous landscape.


EXISTING LAND USE
LEGEND
Existing areas
Special residential
General residential
Shopping
Educational
Place of worship
Government, municipal
Railway
Public open space
Reservations
New street
0
600
1200 metres
QUARRY
CHESTERVILLE EXTENSION
N2
Booth Road
WIGGANS
UMKOMBAAN
Edwin Swales Drive
Bellair Road
Bellair Road
CATO CREST
UNIVERSITY WEST
Cato Manor Road



GEOLOGY MAP
LEGEND
Alluvium
Karoo dolerite
Ecca shale
Dwyka tillite
Natal Group sandstone
Berea formation
Potentially unstable
Totally unstable
Active landslide
f Fault
0
600
1200 metres
QUARRY
CHESTERVILLE EXTENSION
N2
Booth Road
WIGGANS
f
f
Bellair Road
CATO CREST
Edwin Swales Drive
Bellair Road
UNIVERSITY WEST
Cato Manor Road

Late 1989 to early 1990 saw the beginnings of proactive planning initiatives for Cato Manor. According to Goga (1993), this was made possible by the unbanning of political organisations, which represented an opportunity for extra-parliamentary bodies to take action. In 1989, Cato Crest was sold to Ilco Homes (private sector property developers) who were pressurised into applying for the area to be proclaimed a free settlement area ie. for occupation by all race groups. This was the first serious challenge within the Durban area to the racially based separate development that dictated urban policy within the apartheid era.

No objections had been raised to this proposal by 10 January 1990. However, numerous objections to the Durban City Council decision to reduce plot sizes and provide cheap housing in the proposed free settlement area of Cato Crest were received. Manor Gardens residents feared that the proposed plot sizes might result in the area turning into a slum and therefore opposed the development (Bekker *et al*, 1992). In August 1990, Ilco homes sold the land they had purchased back to the Department of Local Government Housing and Works in the House of Assembly for development by Whites. According to Bekker *et al* (1992), the Chief Executive of Ilco Homes accused the White home owners from the areas adjoining Cato Crest of using "economic apartheid" to prevent the development.

4.2.4 1990-1991 - The Negotiating Period

An important outcome of the liberalisation era was the formation of the Cato Manor Development Committee (CMDC) which was composed of various extraparliamentary organisations. Their aim was to promote a more holistic non racial type of planning process, that would guarantee the development of Cato Manor for a low income population. Their aim was to put together a "vision and programme" (Goga, 1993:52). Furthermore, they also aimed to improve economic advantages for small businesses as well as to unify the city (Goga, 1993).

The next year (1991) saw the beginnings of the redevelopment process. Although the Management Committee of the Durban City Council (Manco) accepted that the development of Cato Manor should be on a non-racial basis for low income people, a struggle for control over the area emerged with the Cato Manor Residents Association

(CMRA) and later the CMDC. These organisations were the main opponents to the Durban City Councils (DCC) control of the area. They called for a single united development agency that including all major players to develop the area. This period also witnessed increasing pressures from some Indians for the development of the area for one race group, the Indians, which was met with much resistance from the City Council, left wing groups including civics and the ANC, as well as the residents' associations of White areas surrounding Cato Manor. This conflict was resolved with the formation of the Cato Manor Action Group (CMAG) within Operation Jumpstart, a broad coalition of local and regional interest groups including business, local governments, institutions and political groupings (Robinson, 1992) whose purpose is to stimulate economic development initiatives for the Durban Functional Region (DFR). The CMAG then became the voice and the legitimating body through which the CMDC operated.

The Cato Manor Action Group formulated a six point plan for the development of Cato Manor which was then presented to all the major role-players in the area. According to Professor Peter Robinson (pers comm 26.05.1994), the chairperson of the Action Group, these points were:

* The building of local consensus around development issues
* The establishment of a negotiating forum
* The establishment of a Cato Manor asset trust and urban development corporation
* Development of a strategic development framework
* Representation of a delegation to the State President
* Assembling land and finance to proceed with development.

These were met with support from the various role players.

In April 1991, a new plan for Cato Crest was submitted by the National Investment Corporation which was then negotiating to buy the land. The plan envisaged the erection of high density housing units to accommodate 4 340 residents and in addition agreed to accept full responsibility for the 132 shacks which had been erected in the area, under the condition that no new shacks were built. During the negotiating process between the National Investment Corporation and the House of Assembly prior to the anticipated

purchase of land in May 1991, a vast increase in squatting occurred. Aerial photographs were taken of the area in April 1991, and after negotiated agreement by the CMAG and the Cato Manor Residents' Association to control squatting, the shacks were all numbered. It was agreed that those that were not numbered by the end of April would be demolished. However, this scheme proved ineffective, as the squatters had nowhere else to go, and hence re-built their homes in the same area. The CMAG did not have sufficient political clout nor the desire to deal with the squatting with the use of force and coercion.

In early 1991, the Deputy Minister of Regional Development, Andre Fourie, initiated talks around Cato Manor with the objective of exploring the area's development potential, as well as to prepare a discussion document to allow for the examination of alternative development options (Day and Chetty, 1993). A Cato Manor Steering Committee was subsequently convened under the chairpersonship of Deputy Minister Fourie. The significance of this development is that for the first time, the full range of actors and interest groups around Cato Manor were brought in to formulate their vision for the area. By mid 1991, there was strong support in favour of the ideas that were mooted. It was now the task of the Deputy Minister to get these ideas endorsed by cabinet.

Deputy Minister Fourie was charged with the responsibility of establishing the following with the state:

* What land would the state give to the pool of assets?
* How much money was the state prepared to give, and under what conditions?
* Trust to be set up by the state.

However, a hiatus developed as no results were reported to CMAG. This was due to the fact that the Deputy Minister did not have direct access to the cabinet. This resulted in rising tensions and a lack of confidence in the CMAG on the part of those involved in the CMAG.

This tension led to a further meeting on the 18 July 1991, at which a technical working group was formed by the government to depoliticise developments. The task of the working group was to establish common ground between the parties to resolve different priorities and conflict on the question of a future vision for Greater Cato Manor, as well

as to formulate a set of principles to underpin the planning process (Robinson, 1994). According to Day and Chetty (1993), the main objectives of the technical working group were as follows: to systematically address the goals of holistic development; develop a procedure to implement planning and development optimally and equitably, thus accommodating the aspirations of the diverse interest groups.

In 1986, Dr J. McCarthy estimated that the 23 years of delays in developing Cato Manor has cost the city more than R2 000 million (Natal Mercury, 27.06.1986). Negotiations over the future of the area continue to the present day and development is only slowly taking place.

4.2.5 1992-1993 The birth of the Cato Manor Development Forum

In January 1992, the informal forum convened by Deputy Minister Fourie was formalised as the Greater Cato Manor Development Forum which met for the first time on the 27 January 1992 under the chairpersonship of Professor Peter Robinson of the South African Institute of Town and Regional Planners. It was agreed that the development of the area would be supervised by a sub-committee (which became known as the Steering Committee) comprising representatives of all of the various stake-holders and interest groups in the area, including Indian and African residents, political parties, civic organisations and local authorities (Cross *et al*, 1992).

The task of the Steering Committee was twofold: firstly, to formulate an overall planning objective and secondly, to establish a vehicle by means of which planning issues could be addressed (Robinson, pers comm, 26.05.1994). In July 1992 the Forum together with the Steering Committee produced a policy framework document to guide the development of GCM and in February of 1993, the Forum and the Steering Committee established a Section 21 Company to take responsibility for the development of the area. According to Robinson (pers comm, 26.05.1994), the reasoning behind this was that a company could provide more flexibility than a trust, and could enter into contracts and joint ventures.

4.2.6 1993-1994 The development of the Cato Manor Development Association (CMDA)

At a meeting in February 1993, there was unanimous agreement on the setting up of the Section 21 Company, which became known as the Cato Manor Development Association. Funding for the project was obtained from the Durban City Council (consultant fees), the IDT, the Joint Services Board, US Aid, and the Development Bank of South Africa.

In December 1993, Natal University Professor, Dan Smit, named in September as the National Housing Person of the year, was appointed to assume the position of full-time chief executive of the Cato Manor Development Association. The Cato Manor Development Association was reconstituted in January 1994 and has been charged with the sole responsibility of developing the controversial area in a co-ordinated manner. It has been estimated that this R1 billion housing investment for Durban will provide a massive economic boost for the city and accommodation for 200 000 people. Many challenges face the Development Association, including planning future developments, deciding how to allocate the houses, controlling the burgeoning squatter settlement, defusing neighbouring white opposition and ensuring strong, positive linkages between Cato Manor and the rest of the city.

4.3 CONCLUSION

The history of Cato Manor has been wrought with controversy and turbulence since the Apartheid Era. This tradition of controversy has continued until the present, albeit under differing guises. The difficulty in coming to expedient consensus with regards the future of Cato Manor has created numerous difficulties with which the CMDA have to contend. The following chapter examines these challenges, as they serve to hinder the attainment of a more sustainable urban form.

Chapter 5

CONSTRAINTS TO SUSTAINABLE DEVELOPMENT FOR CATO MANOR

5.1 INTRODUCTION

The development of Cato Manor offers an opportunity to provide housing for some 30 000 to 40 000 households which translates to an estimated 200 000 people. It could also provide thousands of jobs, in the formal and informal sectors, within close proximity to the Durban Metropolitan Area's main employment centres. The redevelopment of this historically contested space gains significance as it is counter to traditional South African city planning, challenging the fragmented, sprawling, segregated landscapes typical of the Apartheid era. Instead it provides the opportunity to create a multifunctional "city-within-a-city" hence contributing towards the compacting of the city. The development will also enable poorer people to live closer to the city and to their places of employment.

The redevelopment of Cato Manor as well as the proximity of Cato Manor to the city will serve to provide many opportunities for increasing the quality of life of the urban poor. This is consistent with the central objective of the Reconstruction and Development Programme (1994) to "improve the quality of life of all South Africans and in particular the poor and marginalised." As discussed above, Local Agenda 21 is also concerned with ensuring an equitable and environmentally sustainable life for all. By describing and analysing the recent processes and events surrounding the re-development of Cato Manor, this chapter aims to explore its potential as a model for the sustainable reconstruction of South African cities.

The principles underlying the establishment of the Cato Manor Development Forum in January 1992 are consistent with those of the concept of sustainable development upon which Local Agenda 21 is based. The Forum had a wide representation, made up of 33 members embracing community organisations, major land owners, public authorities (at local, regional and national levels), political parties and private sector organisations (Appendix 1). These stakeholders agreed at the outset to co-operate fully in the process of the planning and development of Greater Cato Manor; to explore all possibilities of co-ordinated development; and to work towards the creation of a non-racial, democratic

implementation vehicle (Robinson, 1994). The fundamental principles underlying this process were as follows (Robinson, 1993):

i) the planning and development process should be holistic;

ii) it should embrace all the vacant land in the greater Cato Manor area;

iii) the process should be participatory, involving all interested parties (including past, present and future residents), providing them with ample opportunity to make their concerns and development priorities known;

iv) the development should cater for the broad socio-economic requirements of Durban's metropolitan community, having regard for those removed and for existing religious institutions;

v) progress should be made without delay, taking cognisance of projects in progress and the need to maximise available resources.

This progressive approach adopted by the Forum with respect to its establishment and its means of reaching consensus on its purpose and points of departure represents a substantial break from previous ways of tackling large scale urban development projects in South Africa. Robinson (1994) describes these traditional approaches as "being characterised by discrete, mono-sectoral, government or private sector led initiatives, executed in a top-down fashion, with little or no consultation with other interested parties." The process in Cato Manor was based on negotiation between many role players who were previously excluded from public decision-making and urban development processes. Negotiations were initially around terms of co-operation and later around land, development policies and structuring of an implementation vehicle (Figure 12).

As the Forum was made up of such diverse interests, initial negotiations were around terms of co-operation. The different groups displayed disparate and often contradictory priorities. The Westville Town Council and the Manor Gardens Residents Association, for example, were completely opposed to a low income housing development for Cato Manor. The Westville Town Councils' opposition was so strong that they excluded themselves from the negotiating process at this early stage.

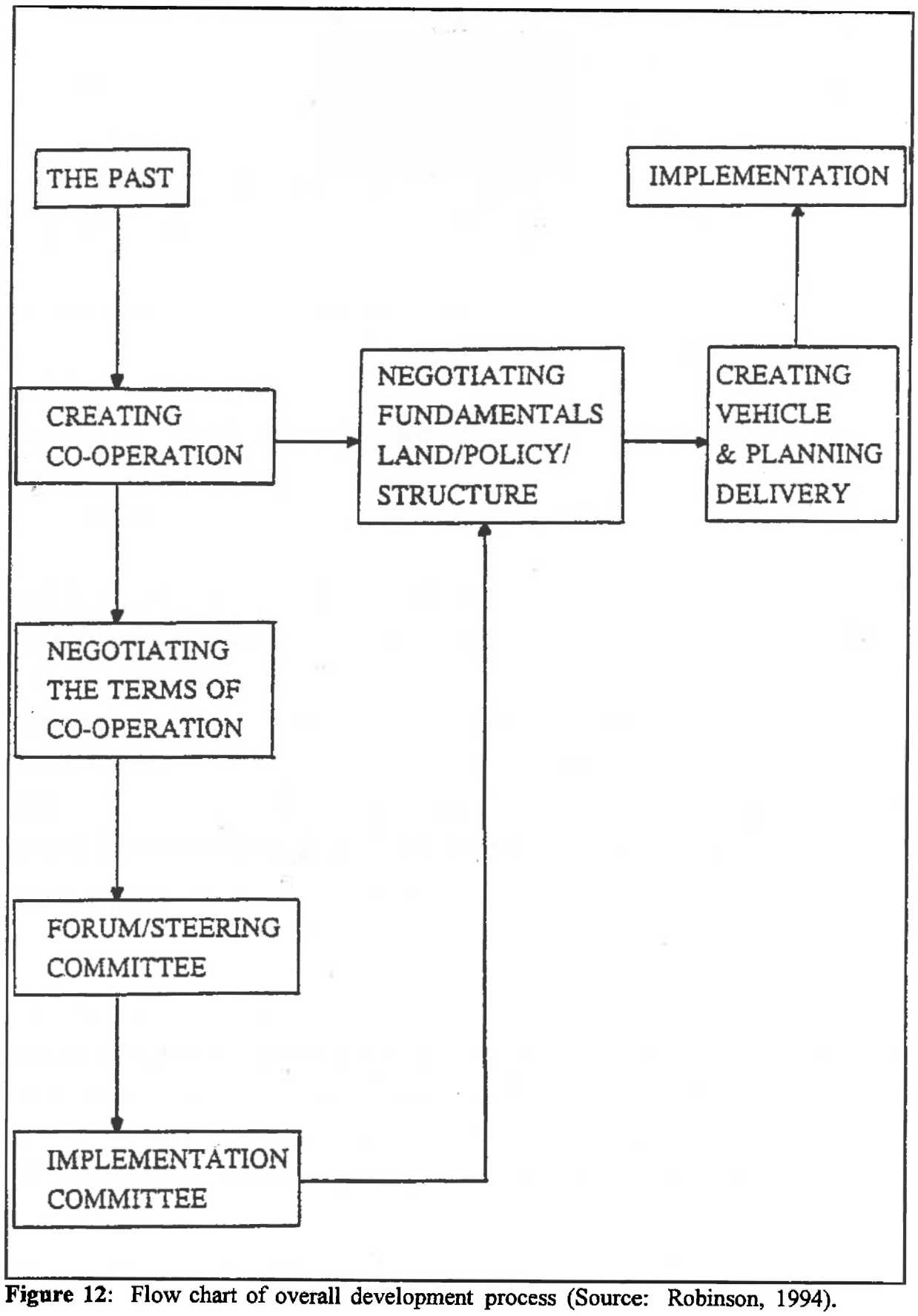


Figure 12: Flow chart of overall development process (Source: Robinson, 1994).

In July 1992, the Forum presented and adopted their vision outlining their development policies entitled "*A Policy Framework for Cato Manor*". The vision comprises three facets: the metropolitan significance of Cato Manor; the spatial and physical form of development envisaged; and the development strategies required to implement the policies. The vision is very broad-minded and ambitious in its outlook, recognising the opportunity Cato Manor offers to providing affordable housing and jobs; the symbolic importance of the area to the people of Durban; its contribution to restructuring Durban; and the need for holistic development.

However, it was realised that attaining full development potential would require consideration of a large number of complex policy issues relating to housing, employment, development finance, planning procedures and the urban environment (Robinson, 1994), for which an implementation vehicle was necessary. It was realised that to merely "guide and advise on development" would be insufficient to ensure that the 8 landowners would accede to the vision or to a concerted implementation programme. The CMDA was then formed as a Section 21 Company which now had legal standing to implement the policy framework.

Since its inception however, the CMDA has encountered a series of challenges that have served to undermine the good intentions and sound principles set out by the CMAG and CMDF and have resulted in the delay of the delivery of houses. These constraints towards effective sustainable reconstruction for the area have been responded to by the CMDA in various ways, and this will be discussed below. The main problem areas which emerged were, institutional, legal, financial, environment, public awareness and support, capacity and staffing, and a lack of holism. Before exploring the challengesfaced by the development, a brief note on the methodology used will follow.

5.2 EVIDENCE AND METHODOLOGY

The process of collecting data to analyse the development process unfolding in Cato Manor was wrought with difficulty. It is considered important to include a short note on the difficulties encountered in this project, as these problems are not considered to be

exclusively unique to this project. The difficulties encountered also resulted in a lack of fit between the theoretical and empirical material presented in this thesis.

At the outset of this project, it was intended to present a critique of the actual development (which was planned to have begun by the end of 1992), analysing the environmental impacts of the development process. However, by the time the research for this thesis was completed, the only signs of development on the ground were the show village, and the beginings of the first Fast Track development in Wiggans. This analysis could not therefore assess the sustainability of the entire development, but focused rather on the process of development and initiatives that have been instituted by the CMDA to date (June 1995).

The source of details with regards the development process in Cato Manor were in the soul possession of the CMDA. Obtaining interviews with the more senior and influential members of the CMDA was virtually impossible, due to their own time constraints created by the urgency of the development, as well as the various crises that they had to deal with during the planning stages. The research therefore had to rely on interviews with other members of the CMDA, who were not always directly involved in decision-making and were hence not well versed with the details of the development process. It is therefore difficult to adequately support many statements in this thesis. Nevertheless, every attempt has been made to accurately document the development process as a whole.

Although the CMDA was committed to transparency in the development process, it was difficult to obtain detailed copies of the structure plans for the various precincts to examine and comment on at length. This has also contributed to unsubstantiated arguments being presented. In addition, at the time at which the research for this thesis was completed, very little was documented with regards the contemporary developments in Cato Manor.

Despite the fact that insufficient evidence was available to present substantive arguments, it was felt that the themes that emerged from the research were strong enough and discrete enough to legitimately be identified as the challenges faced by the development in Cato Manor.

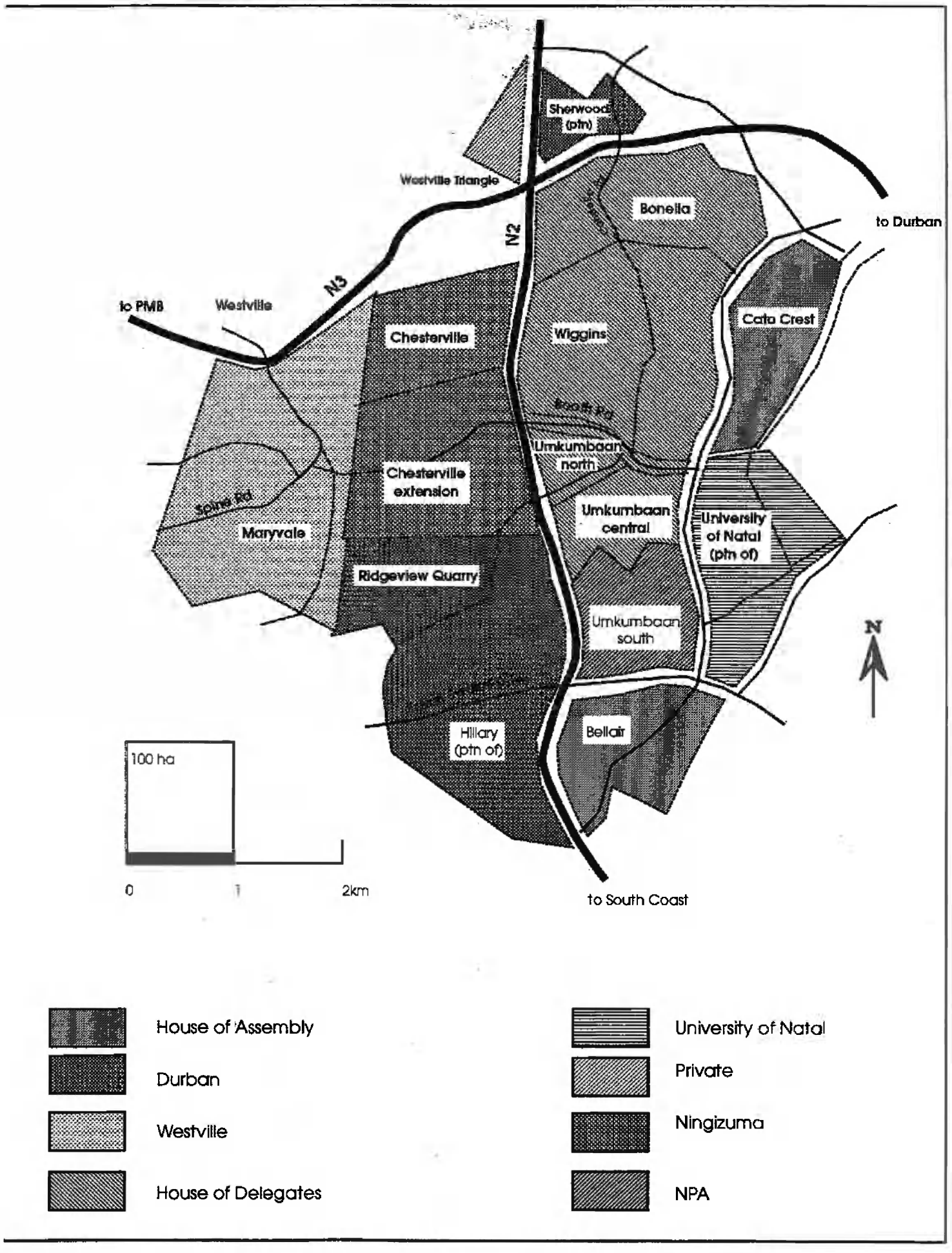
5.3 CHALLENGES FACED BY THE DEVELOPMENT

5.3.1 Institutions

One of the issues that has been identified as being responsible for the slow rate of development in the area, is the political differences that exist between various government departments and other stakeholders (Chetty *et al*, 1994). The Greater Cato Manor area is divided into 15 sub-areas, with a total of 7 different land owners (Figure 13; Appendix 2), each with their own forms of administration, and their own development priorities. In addition, the boundaries of these sub-areas are drawn without reference to environmental features (such as river catchments, open spaces etc), resulting in great difficulties in co-ordinating the management and planning for such features.

A prime example of conflict arising from administrative fragmentation in the area is that of the House of Delegates (HoD) development in Wiggins beginning in the mid-1980s. By the early 1990s numerous African households began to settle in Cato Manor, concentrating in Cato Crest, and establishing informal settlements in areas which had remained undeveloped for thirty years (Chetty *et al*, 1994). The HoD felt threatened by the shack settlements, as they had the potential to eclipse their own plans. As a response, the HoD rapidly implemented several housing projects in the Bonella, Umkumbaan and Wiggins subsections of Cato Manor, amounting to a few thousand homes. The allocation of these houses was perceived to have been on a racially selective basis, although Jimmy Berger, (the HoD planning co-ordinator) insists that the allocation of houses solely to Indians was done under the orders of the government, in terms of the Group Areas Act (Berger, pers comm, 26.05.1994). The HoD also secured a very favourable form of housing subsidy, allowing Indians to purchase houses at nominal rates (Lukuko, pers comm, 01.06.1994).

The CMDA inherited the legacy of this HoD development and has had to contend with the challenges that it has presented. The CMDA have attempted to make it very clear that they did not have anything to do with this development which was clearly racially biased. According to the "*Policy Framework for greater Cato Manor*" (CMDF, 1992), the development of Cato Manor is based on class rather than race. A racially biased development would serve to perpetuate the unsustainable urban form created during the apartheid era. Furthermore, a development that discriminates against different sectors of


Sherwood (ptn)
Westville Triangle
Bonella
to Durban
N2
N3
to PMB
Westville
Chesterville
Wiggins
Cato Crest
South Rd
Umkumbaan north
Chesterville extension
Spine Rd
Maryvale
Umkumbaan central
University of Natal (ptn of)
Ridgeview Quarry
Umkumbaan south
N
Hillary (ptn of)
Bellair
100 ha
0
1
2km
to South Coast
House of Assembly
Durban
Westville
House of Delegates
University of Natal
Private
Ningizuma
NPA

society is also in contradiction to a fundamental principle of sustainable development and the RDP, which aims to increase the quality of life for all people, especially the poor and the marginalised.

As the HoD development was the first in the area, the squatter community in Greater Cato Manor are using the physical form of the development as well as the method of subsidy as the expected model for future development. This is in keeping with the trend highlighted by dewar (as oted in section 1.3.1.1) towards "anti-city values of suburbia which promotes the single storey house on a large plot as the image of 'good' urban living". With the introduction of the new housing subsidy regulations in 1994, the CMDA has been unable to secure the kinds of subsidy structures that the HoD offered, which has resulted in tension between the CMDA and the communities (Lukuko, pers comm, 01.06.1994). The houses built by the HoD are detached, and at a low density, which has raised the expectations of the communities, who are now resistant to any other form of housing (Lukuko, pers comm, 01.06.1994). The form, cost and allocations process followed by the HoD were all at odds with the widely canvassed and agreed approach of the CMDF and the CMDA (Robinson, 1994). However, it can be assumed from the comparison between the density of trees in informal and formal areas, the future residents of Cato Manor do not aspire to the bleak landscape as created in the House of Delegates Development.

The conflict and controversy surrounding the HoD development shows that integrated, holistic planning is difficult when a single area is planned by different groups with disparate priorities. It is clear therefore why development during the apartheid era (which was characterised by a great deal of institutional fragmentation) was unsustainable and was met with such resistance.

In addition, the HoD housing development is monofunctional, catering only for the delivery of houses. The landscape created is sterile, impersonal and monotonous. Furthermore, it does not provide opportunities for stimulating economic activities (formal or informal) in the area. The conflict surrounding this development serves to prevent the development from contributing towards the sustainable reconstruction of Cato Manor. Peace, security

and consensus building are key aspects of the RDP, sustainable development and Local Agenda 21, and the HoD housing development is contrary to all of these developments.

5.3.2 Law and Regulation

Numerous invasions have been staged in Cato Manor, which the CMDA has had very little power to control or prevent. In response to the inability of the CMDA to contain the invasions, they commissioned a study to suggest approaches towards land and home invasions by Hindson *et al* (1994). However, these policies proved to be largely ineffective as the CMDA lacked political muscle (Gielink, pers comm, 05.06.1995). The two invasions that had the biggest impact occurred in July and November 1993, one of vacant land, and the second of newly built houses. However, there have been numerous subsequent invasions of vacant land, which will not be discussed in detail here, as they have broadly the same motivations and consequences as the 1993 invasions.

Cato Crest was a vacant area of some 100ha situated next to an upper middle class suburb, Manor Gardens. In an attempt to escape violence in other parts of metropolitan Durban, about 300 squatter households established themselves in Cato Crest (Makhathini, 1993; Plates 2 and 3). The Natal Witness (05.04.1995), describes the motivations behind the invasion of Cato Crest as follows:

> "A few years ago it (Cato Crest) was a vacant piece of land with a history of shacks and shebeen queens. After President Nelson Mandela's release, people leapt at the gap and began to return to the land they called Umkumbane (Cato Manor). It was an irresistible opportunity - to escape violence, to find work, to reduce travel expenses to the city. A new place to call home. A place that jumbo jets fly over, from where one can see Durban University on the one hill and the sprawling Westville Pavillion Shopping centre on the other, a place of darkness at night but surrounded by the lights of wealthier homes.
> It is Egoli. A filthy place with golden opportunities."

The mushrooming squatter settlement in Cato Crest resulted in a negotiated agreement between the authorities, the Forum and the squatters. The squatters' houses were numbered which served as a form of identification of the original squatter population who were given permission to stay until suitable and affordable housing in Cato Manor was built, on condition that their numbers remained constant (Plate 4). However, in July 1993, a further

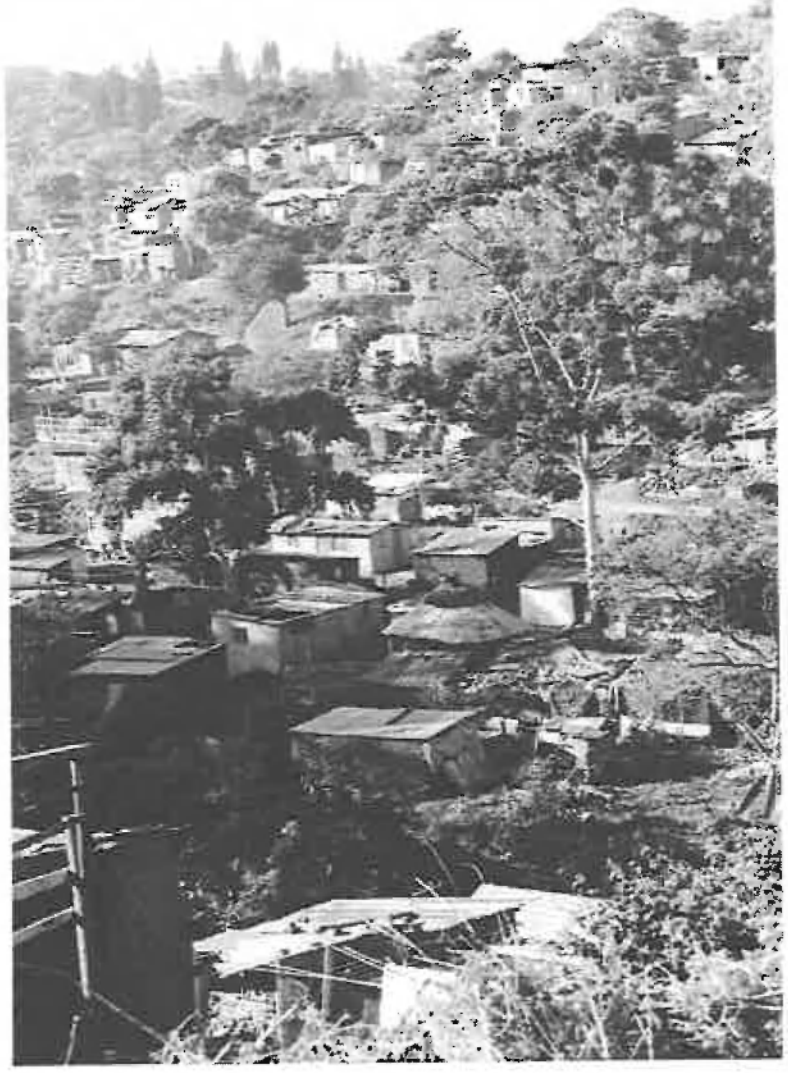


Plate 2: View of Cato Crest

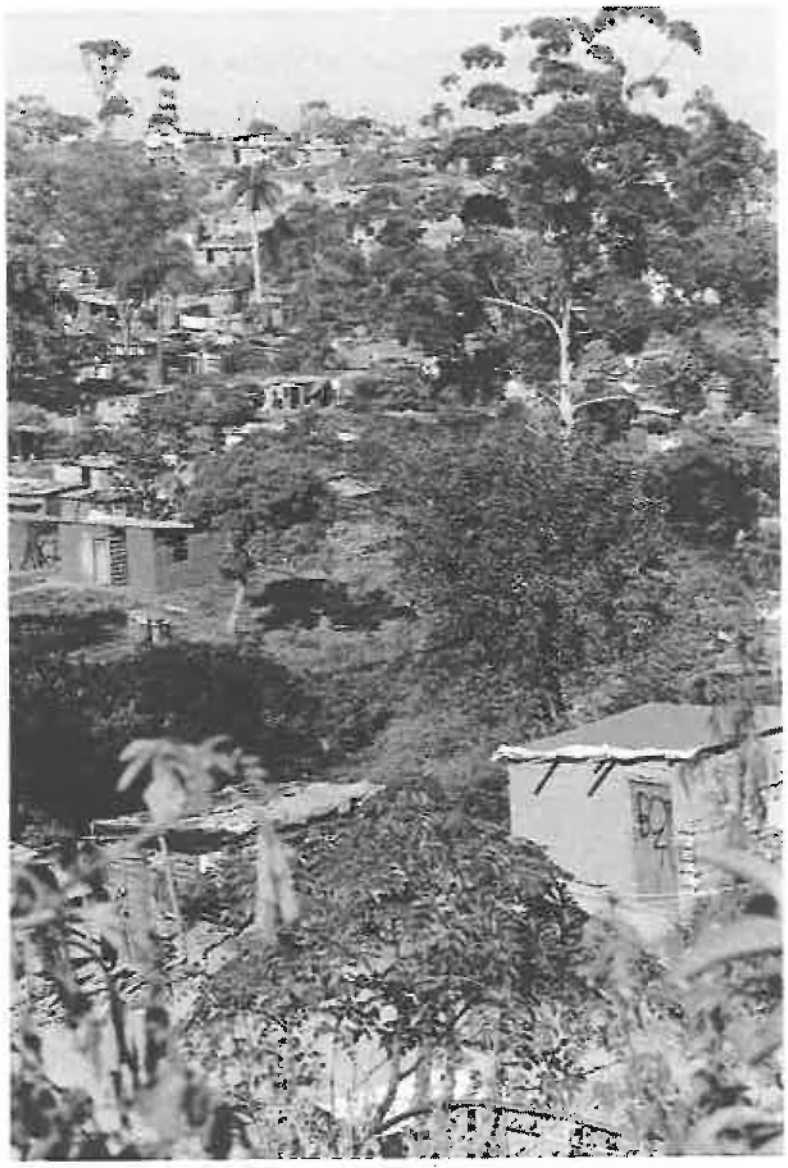


Plate 3: Numbering on shacks in Cato Crest

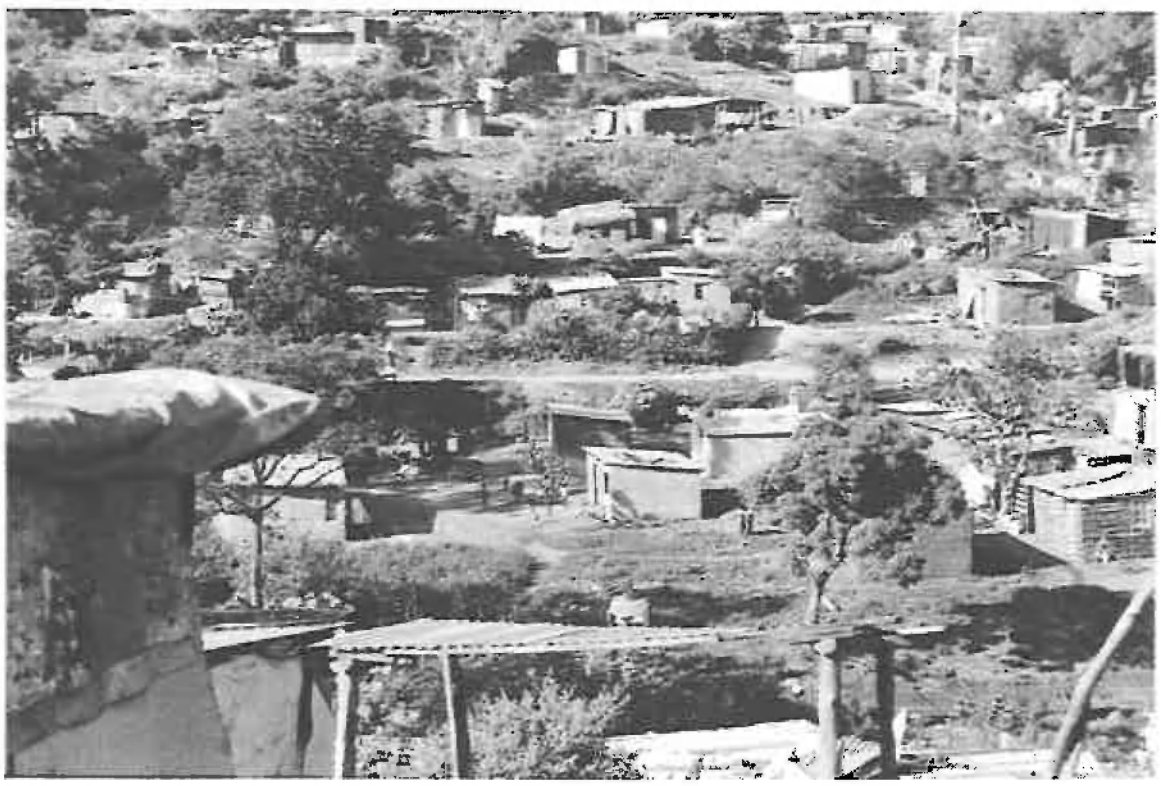


Plate **4**: View of Cato Crest

wave of squatting occurred. Despite attempts to control the numbers, a manageable situation had become unmanageable and highly volatile. The CMDA tried to alleviate the situation through meetings with relevant parties but, as no alternative places have been identified for the squatters to settle in, and no coercive structures are in place to prevent further increases in the numbers of squatters, it seems that the squatters that are there will stay.

Furthermore, the numbers of squatters in Cato Manor continue to increase as illustrated by the shacks in Figure 14. The Dunbar Road invasions in Wiggins West (Plate 5) which occurred in August 1994 also received substantial coverage in the press. The squatters were issued with an eviction notice from the provincial housing authorities which designated a time period within which they had to move. This action made by the provincial housing authorities signified that provincial and national housing authorities had decided to broach the politically sensitive issue, which is holding up the delivery of housing in several areas. It also marked the first indication that the Government was prepared to get tough with shack dwellers as a means of ensuring delivery of housing later.

According to the Daily News (08.08.1995), the eviction notice distributed by the KwaZulu-Natal provincial administration warned squatters:

> "Your illegal occupation of the land is undermining genuine attempts to provide housing for low-income people...Schools, parks and community facilities and houses are planned here...By settling on the land you are denying both existing and future residents of Wiggins the right to a properly planned residential area."

Peter Miller, the KwaZulu-Natal Housing Minister warned that continued uncontrolled squatting would have "catastrophic consequences" for housing prospects in Durban and the rest of the country (Daily News, 09.08.1994). He goes on further to say that "If we allow squatting to continue at Cato Manor, it will become the biggest slum in the city."

The conditions within Cato Crest bear testimony to the prediction of the area turning into a slum, which is an uncomfortable echo of Cato Manor's past. The environmental problems suffered by people in Cato Crest is a prime illustration of the need to address "brown agenda" issues in the Greater Durban Metropolitan Region. The lack of electricity

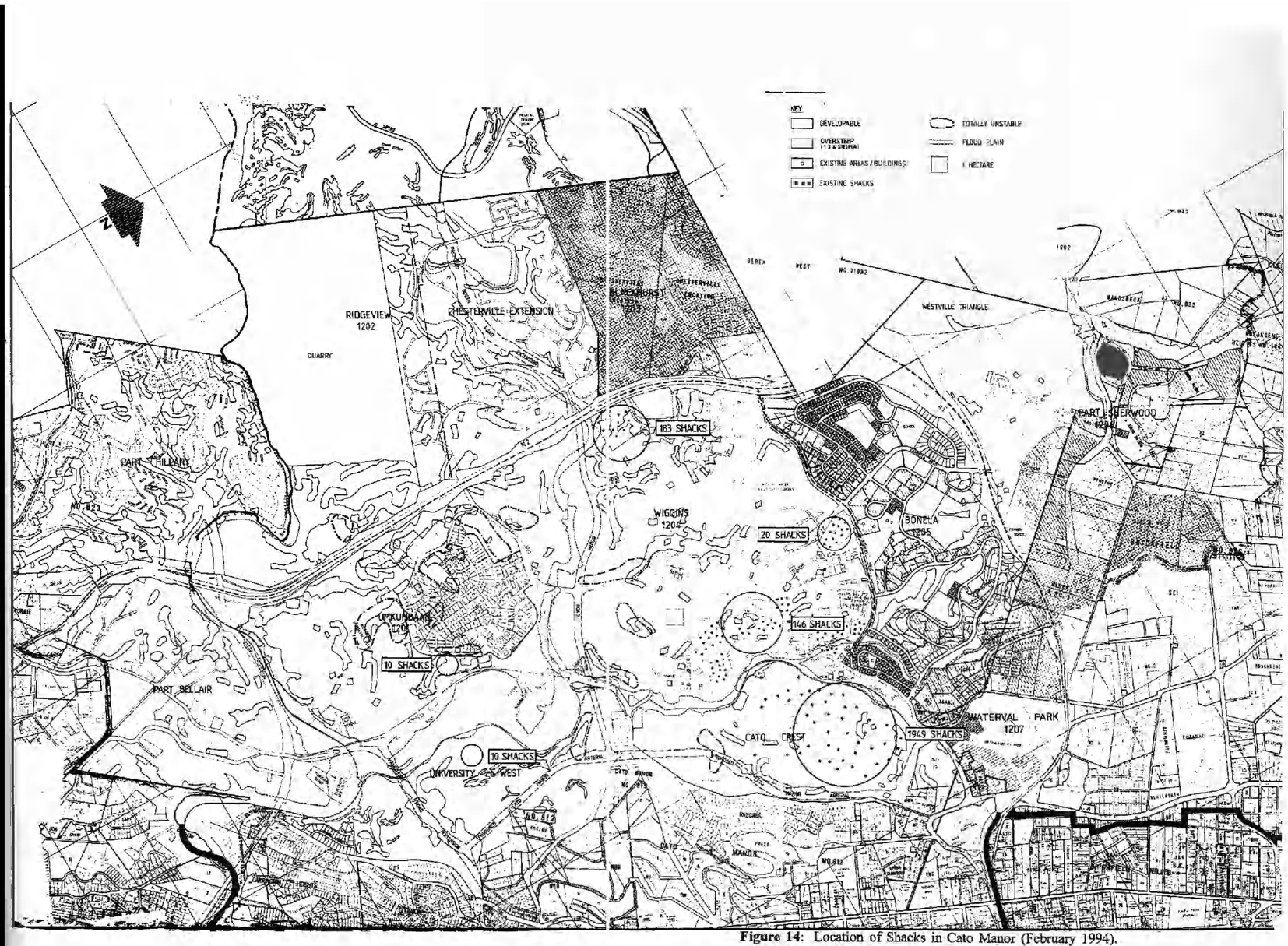


Figure 14: Location of Shacks in Cato Manor (February 1994).

Plate 5: Informal settlement in Dunbar Road area, Cato manor.

Plate 6: Smoke emanating from shack as a result of burning fuels for energy.

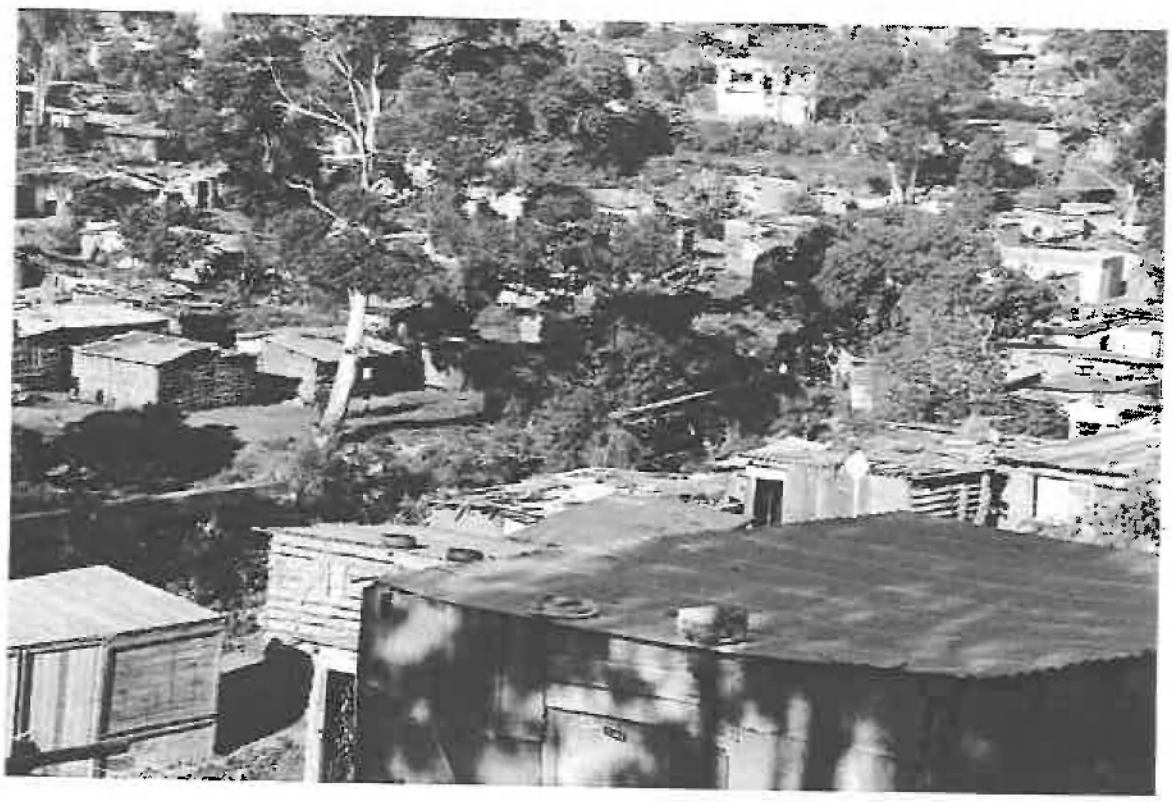


Plate 7: Dumping in the Umkumbaan River as a result of lack of refuse removal services in Cato Crest.

in the area necessitates that people burn a variety of fuels (including wood and paraffin) as an energy source (Plate 6). This results in indoor air pollution, which leads to respiratory infections, especially amongst the young and elderly. Overcrowding in the area provides the ideal setting for a rapid spread of disease. The lack of refuse removal services has resulted in localised areas becoming dumping grounds (Plate 7). When this occurs next to a river (as illustrated in Plate 7), the likelihood of the spread of water-borne disease becomes more serious. This is exacerbated by the fact that the supply of fresh water and sanitation facilities are grossly inadequate in the area.

Heavy rains at the end of March 1995 brought to the public eye the appalling conditions under which the people of Cato Crest live. Flooding of the Umkumbane River resulted in several people drowning and hundreds of people being left homeless. The destitute were placed in emergency camps that were severely overcrowded and underserviced. Toilets were not emptied and a lack of washing facilities resulted in an unbearable stench. A Cato Crest Civic Association Committee member, Mrs Vivian Makhaye, is quoted in the Daily News (29.03.1995) as saying that "since the people had been made destitute, the health of the elderly and children had deteriorated, with cases of diarrhoea and influenza being reported." It is clear that as there is nowhere to move the squatters immediately, an interim measure to circumvent deteriorating health and environmental conditions is necessary. This requires that existing squatter areas be upgraded, with the provision of a greater number of serviced toilets and water outlets as priority items.

The second significant invasion in 1993 was staged by Chesterville residents who invaded and forcibly occupied some six hundred unoccupied HoD Wiggins houses. The houses were marked in some way as a symbol of ownership (Plates 8,9,10 and 11). The suggestion has been made that the Chesterville Residents Association - CRA (civic in the area) and/or the Chesterville branch of the ANC may have supported the invasion as a symbolic protest at what was perceived to be a racially based allocation procedure (Chetty *et al*, 1994; Robinson, 1994). According to the Daily News (03.12.1993), many of the people who had illegally occupied houses in Cato Manor feel betrayed by the House of Delegates, whom they accuse of fuelling racial tensions between themselves and the Indian

and coloured residents. The invasion of the HoD houses is a physical manifestation of the conflict created by fragmented development initiatives in the area.

Other contributory factors were the slow pace of other developments in Cato Manor and the situation of the severely overcrowded black township of Chesterville, which lay adjacent to Wiggins. "The squatters living in what they called chicken shacks, have watched the 1000 or so houses go up and have grown increasingly angry" (Daily News, 21.11.1993). This was not an issue of the CMDA's making, and it can be argued, was a direct result of the HoD's determination to "go-it-alone" and develop as much as it could before the end of the tri-cameral era (Robinson, 1994).

The illegal occupation of homes in Wiggins has brought to the fore concerns that principles of private property ownership are seriously threatened, and have highlighted levels of frustration experienced by thousands of people who are inadequately housed (Briggs, 1994). The situation illustrates the potential for conflicts over housing and other scarce resources in the built environment to assume a racial dimension. Finally, the crisis also displayed the potential for conflict between people and the state over the housing question, particularly where the state is challenged to take action in defence of private property (Briggs, 1994).

A recent development that it is hoped will help to stop further squatting and invasions in Cato Manor is that the KwaZulu-Natal government has taken formal responsibility for development of Cato Manor (Business Day, 02.06.1995). It was felt by the CMDA that political will was needed to enforce policies on invasions in the area (Gielink, per comm, 05.06.1995). This political will, will hopefully be provided by a committee made up of Peter Miller (KwaZulu-Natal housing minister and ANC leader in the region), provincial economic affairs and tourism minister Jacob Zuma, and Sipho Ngwenya, the mayor of the Durban Transitional Metropolitan Council.

Another land related factor that has the potential to retard the development process in Cato Manor is the National Land Claims Commission. The Commission was established in mid-1993 to investigate and address claims of people who had been dispossessed under apartheid legislation. Considering the history of Cato Manor, it can be expected that there

Plate 8: Aerial View of Wiggins

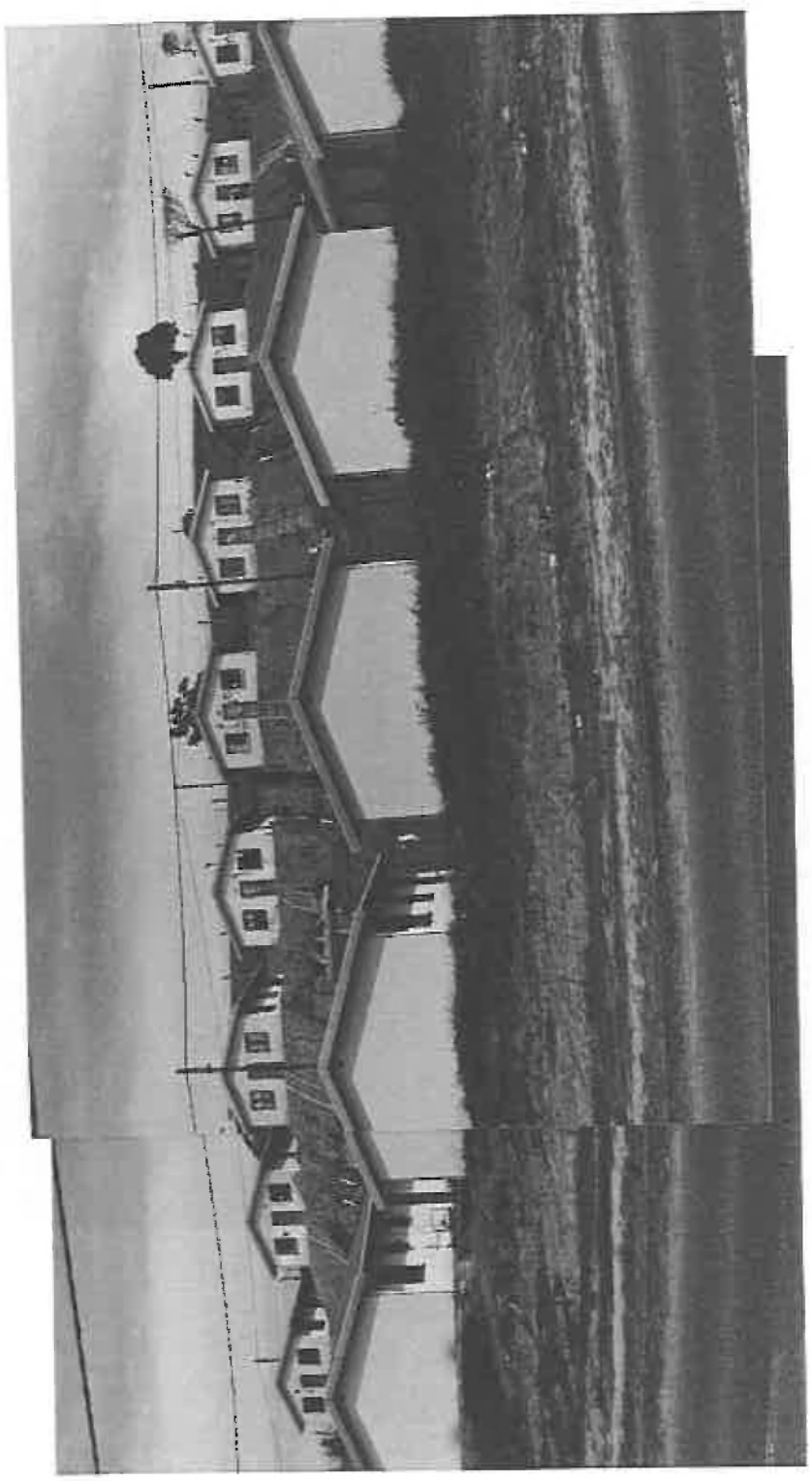


Plate 9: Occupied houses in Wiggins.

Plate **10**: Occupied houses in Wiggins - Houses were marked as a symbol of ownership by the new occupants.

Plate **11**: Houses occupied in Wiggins.

will be numerous claimants, giving rise to a situation that could hold up the process for years.

Due to the large lapse in time since the Group Areas removals and the redevelopment of Cato Manor, claims to the land are wrought with difficulty. Numerous families have since become very successful economically, and as Cato Manor is being developed for low-income housing, contradictions and conflicts have arisen as to who should be allowed back into the area. In addition to people who owned land in Cato Manor, numerous traders and bus drivers who had routes through the area are staking claims to continue these practices (Ferguson, 1995). In response to this, the CMDA is negotiating with the land claims commission and with some of the claimants, in order to formulate a strategy that will redress legitimate claims without severely impeding the development process (Robinson, 1994).

The actual planning of Greater Cato Manor is influenced by a variety of laws and regulations that serve to prevent development creating a satisfactory quality of life for its inhabitants. Development in Cato Manor is influenced by the iniquitous Less Formal Township Establishment Act which allows for the legal bypassing of minimum standards. There is therefore no guarantee that there will be an overall improvement in the quality of people's lives. Apartheid urban planning allowed for different standards for services according to race. Monitoring of standards is under the control of local authorities, but in many cases urban developments in low income areas take place without proper monitoring, allowing for the provision of substandard services. However, it is acknowledged here that some standard services are in fact less sustainable than the substandard services that could be supplied, and even the methods used by informal settlers in creating settlements. Nonetheless, a more thorough study needs to be carried out to ensure that the most sustainable technologies and methods are used in the delivery of houses and services in Cato Manor.

In addition, no environmental assessment of the plans was called for as it was felt by the planners involved that an Integrated Environmental Management (IEM) procedure for the development of Cato Manor would be inappropriate because of the short time scale and

urgency of the development, as well as the difficulty of incorporating IEM procedures into structure plans (Roberts, pers comm, 23.03.1995). It was argued that IEM procedures work better when applied to specific developments than in developing regional plans (IDRC *et al*, 1994). The stark and sterile landscape created by developments in Cato Manor (eg Wiggins and Bonella - Plate 8) bears testimony to the fact that environmental contracts need to be built into the construction contracts of developers, who tend to indiscriminately and unnecessarily denude the land of vegetation.

Under the Local Government Transition Act, interim local or metropolitan councils will replace existing local authorities. These transitional councils will be responsible for the installation and maintenance of infrastructure and services, and for zoning and land-use decisions in urban areas, and will hence be responsible for the environment as well. The restructuring of the local government is therefore an important opportunity to ensure that an integrated holistic planning process is accepted by all local government departments.

5.3.3 Finance and Economics

A development of the scale of Cato Manor requires large inputs of financing, which will necessarily have to be derived from a variety of sources. Bridging finance was obtained from the Durban City Council to enable the Forum to complete initial work and to establish the CMDA. Other financing has come from the Independent Development Trust, USAID and the Development Bank of South Africa. The Cato Manor development has also been granted Presidential Funding in terms of its importance with regard to the RDP. The Cato Manor project is one of three urban renewal projects in KwaZulu-Natal to benefit from the fund. Jacob Zuma has been quoted in the *Financial Mail* (November 1994) as saying that

> "the selection of Cato Manor as a lead project is going to set important precedents for the way critical development issues should be addressed...All sectors of society need to watch this project closely and give it maximum support to ensure that it succeeds."

Despite the fact that capital is available in principle, this money is insufficient, and has been blocked at the provincial level by political competition, hence constraining the power of the CMDA to deliver. Competition between political parties has had the effect of delaying the CMDA's access to RDP funding. According to the CMDA (1994), this competition has

revolved around who at regional level will be seen to control a project which ultimately will involve some R3 billion of public and private sector investment. The CMDA have however submitted their Business Plan to the Government of National Unity, and is awaiting its approval, before the money is released (Gielink, pers comm, 05.04.1995).

The available models for housing funding in the area also serve to undermine the principle of a development for the poorest in society. The first model, the incremental housing provision model, applies only to people earning less than R800 per month. These people are not eligible to obtain a loan from banks or building societies, and are therefore entitled to the government subsidy of R17 500, which is insufficient to cover the cost of a house. The second model, the bond and subsidy model, requires that people earn more than R1200 per month which entitles them to a bank or building society loan. However, this excludes more than 70% of the population in Cato Manor. Irrespective of the funding model, houses are likely to be unaffordable to the poor of the city, which detracts from the prime aim of the development. It would appear therefore, that the only access that the poorest in society have to Cato Manor is through setting up informal settlements.

A further underlying constraint to sustainable development in Cato Manor is the attitude of economists (and often planners) to the environment. It is extremely difficult to affix a value in economic terms to the environment. Consequently, the medium- and long-term opportunity, environmental, and social costs associated with the development will continue to be "undervalued", and short-term benefits such as job creation, which are easily calculable, will take precedence (Quick and Pistorius, 1994). Indeed, within Cato Manor, the large scale delivery of houses is the priority issue driving development. The driving force behind the project is therefore the development of a built environment and the natural environment is sidelined and given little or no protection. This is evident in the denudation of vegetated areas by contractors, resulting in long term soil erosion and high rates of runoff (Plate 12).

5.3.4 Public Awareness and Support

Two principal civics have been operating in the Greater Cato Manor area since the early 1980's. The Cato Manor Residents Association (CMRA) represents the interests of the few

Plate **12**: Area completely cleared of vegetation for development.

hundred remaining (largely Indian) residents, whilst the Chesterville Residents Association (CRA) represents the African residents from Chesterville. As these groups were organised, communication and exchanges of information between the CMDA and the civics became possible. This however was not the case with the informal squatter community who were not a coherent group. The grounds of commonality amongst the squatters is their plight for housing, services, infrastructure and employment. Getting the squatter community to participate in the planning of the development was hence difficult.

As the CMDA is committed to community participation and involvement in the planning process, the CMDA launched a capacity building and communications programme in 1994 (CMDA, 1994). The programme was designed to ensure that the communities concerned were able to formulate informed positions on development issues. In order to ensure that the CMDA do not estrange themselves in the planning process, three communications programmes are presently operational: the Housing Liaison Officers programme, the creation of an Information Forum and the publication of a community newspaper.

The community newspaper entitled "*Izwi*" (the Voice) was launched in May 1995, to provide a two-way communication channel between the CMDA and the Cato Manor residents, to inform residents about housing and development issues, and to provide a forum for debate. In addition, a number of news items endemic to Cato Manor appear in the newspaper. The newspaper is distributed free to all residents of Cato Manor and the surrounding areas. Izwi has great potential to bind the Cato Manor community and to allay fears and reservations that can emerge when there is limited access to information.

5.3.5 Capacity

The staffing and capacity for the development project is a further factor that has jeopardised expedient planning in the area. Although the CMDA was registered in early 1993, the quest to recruit a Chief Executive Officer (CEO) took several months. The CEO and senior executives were only in place at the beginning of 1994. As a result of this lack of capacity for most of 1993, the CMDA was unable to play the pro-active role that it had intended (Robinson, 1994). In addition, it made little progress with necessary planning that was

needed to launch the development programme, and it was largely ineffective in its communications (Robinson, 1994).

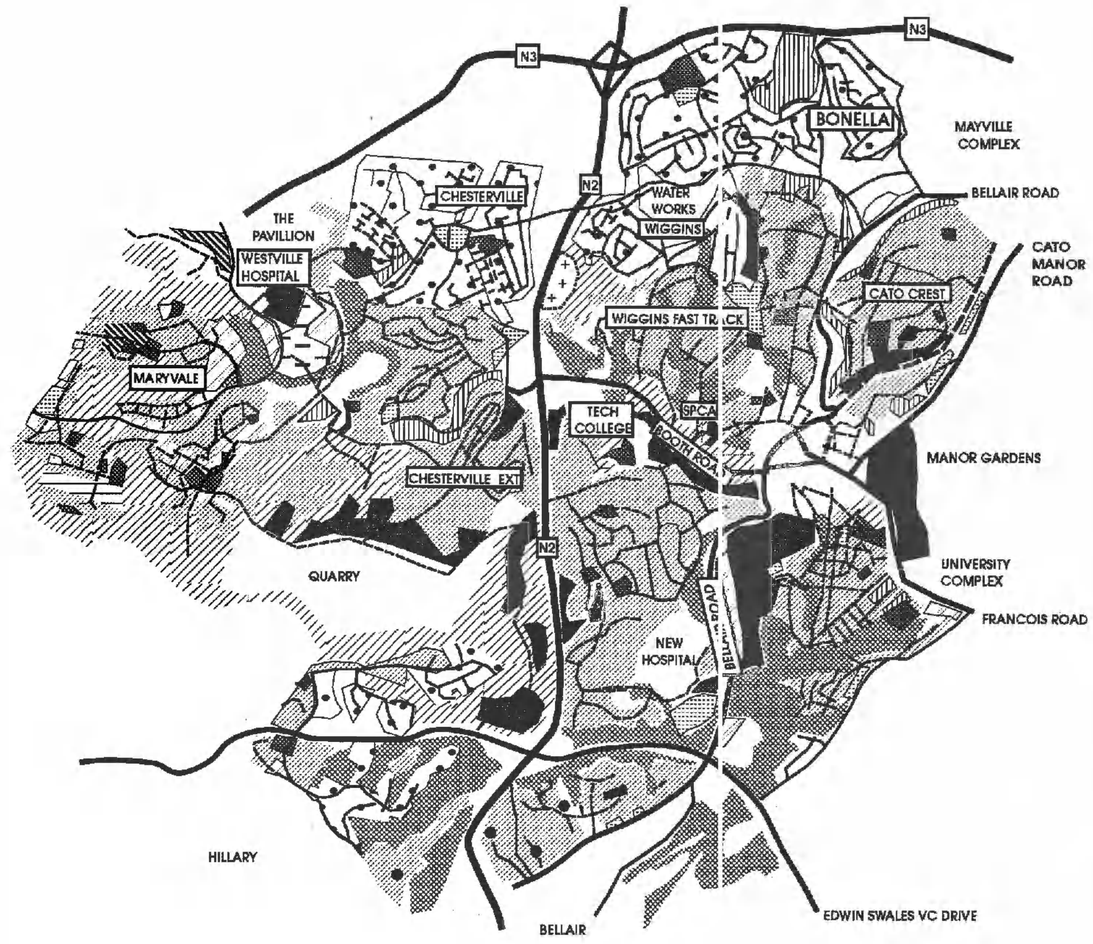
The role of the Durban City Council was left very undefined and vague when the CMDA was established. The City was not included in decision making, resulting in the marginalisation of the City (Roberts, pers comm, 08.08.1994). By the end of 1993, the relationship between the CMDA and the city was crumbling, resulting in the City losing confidence in the CMDA. Although the City provided technical support, they began to doubt whether the CMDA would be able to deliver, and failure would leave the ensuing problem in the City's hands. As expected, by late 1994, the CMDA recognised the importance of having the full co-operation of the City, as they were clearly battling to plan an area for 200 000 people. However, neither did the City have the capacity to take on such a large project without increasing staff and budget allocations (Roberts, pers comm, 08.08.1994).

The staff of the CMDA also have a limited capacity with regards to environmental concerns. The bias in expertise is strongly towards housing (Smit, 1995). As there is limited understanding of fundamental environmental processes, of the importance of natural geographic boundaries and of natural environmental cycles, the ability to understand and work with the whole was lacking.

5.3.6 Environment

It becomes apparent in the unfolding of the development process in Cato Manor that the principles set out in the Policy Framework have been difficult to implement. In addition to the historical and institutional factors that have made smooth development in the area difficult, it could be argued that insufficient research was done prior to the formulation of the Policy Framework, rendering it idealistic.

An examination of the preliminary structure plans for the area confirm this (Figure 15). Development plans for areas that are privately owned (eg. the University and the quarry) have been drawn up with no consultation with the land owners. The University has its own plans for its land, and the quarry is still to be operational for the next 60 years. There is



LAND USE LEGEND

- Existing residential
- Proposed residential
- Conservation
- Active open space
- Service and light industry
- Cemetry
- Education
- Passive open space
- Commercial and social facilities
- Office
- Civic and market space
- Mixed use
- Urban agriculture
- Existing roads
- Proposed roads

also housing proposed for the landfill site. This landfill was established in the early 1970s, when there were no regulations regarding the contents and documentation of what went into the landfill. The landfill is hence potentially too unstable for housing at the densities proposed.

In order to assist the CMDA with incorporating environmental considerations into the precinct spatial framework plans that had already been drawn up for the area, the CMDA approached the Durban City Council in October 1994, requesting that an open space plan for Cato Manor be undertaken by a team of City personnel and supplemented by consultants as appropriate. A working group viz. "*The Environmental Conservation, Parks and Recreational Facilities Working Team*" was then formed, which included the author of this thesis. The objective of the open space study was defined by the team as follows:

> "The achievement of a socially and ecologically sustainable open space system for Greater Cato Manor through such design and management strategies as will maintain the health, integrity, diversity and stability of the ecosystem of the area while at the same time meeting the fundamental societal needs for open and recreational space in a sustainable fashion." (Environmental Conservation, Parks and Recreations Facilities Working Team, 1995).

In addition to designing an open space system for the area, the group was also tasked with the siting of sportsfields, as well as with identifying principles for storm water management in the area.

In order to facilitate the rapid planning and development of the Greater Cato Manor area, the CMDA requested that the initial report produced by the Working Team focus primarily on identifying and providing the rationale for selection of those areas required for open space purposes in Greater Cato Manor (Environmental, Conservation, Parks and Recreational Facilities Working Team, 1995). This report, along with reports from other working groups commissioned by the CMDA have been synthesised by the CMDA and incorporated into the spatial plans. These plans will then be reviewed and reworked by the working groups to attain maximum benefit from the perspective of the various interests being represented by the teams. It is possible that during the course of 1995, a second report will be produced outlining detailed design and management specifications for the system. The need for this follow-up report still has to be confirmed by the CMDA.

However, the value of working groups is currently being debated within the CMDA, as they are considered to have made valuable inputs in terms of policy, but not in terms of detailed planning (Ferguson. pers comm, 09.06.1995) which was left to various planning firms.

It is commendable that an environmental input was called for by the CMDA, as this is a break from traditional planning of low-income housing. However, this does not guarantee a sustainable spatial framework for the area. This input has had a very narrow environmental focus, being limited to open space planning, and hence has limited relevance for sustainable development as a whole. In addition to the limited scope of the input, the environmental working group was not briefed to critique the initial structure plans from an environmental perspective as would have been required for an IEM procedure. The environmental input is hence not sufficiently interventionist, restricting its potential to ensure environmental integrity.

The need for a full environmental assessment of the plans for the area is illustrated by the "show village", where examples of the types of houses to be built in Cato Manor are displayed. Following heavy rains these houses are frequently flooded. The walls are damp and the foundations are beginning to show along the outside walls. This situation could have been avoided had sufficient environmental data with regards runoff, slope and vegetation been available.

As a response to the general lack of socio-economic, biophysical and historical data on which to base decisions on development projects of this nature, a "*State of the Environment and Development Project*" has been instituted for the City of Durban in partnership with The Council for Scientific and Industrial Research (CSIR) and the Institute for Social and Economic Research (ISER). In addition to the state of the environment report, the research teams will produce a Directory of Organisations, Specialists and Initiatives on the Environment and Development in the Durban Metropolitan area, a bibliography on environmental and developmental writings, a data base of key indicators on the environment and development and a GIS system designed as a database on the environment and development (Roberts, pers comm, 23.03.1995). The State of the Environment and Development Report is scheduled to be completed by November 1995 to co-incide with the

local government elections. A data-base of environmental information will therefore be available from which to base future development decisions. However, the apparent lack of environmental commitment from the planners, as well as the political urgency of delivery could serve to undermine the use of this report.

5.3.7. Lack of Holism

The lack of integrated, holistic management of the environment is partly the consequence of institutional fragmentation (see above, 5.3.1.), but is also a direct result of a fundamentally flawed attitude towards the environment. Below is a summary of this attitude problem that marginalises environmental concerns as presented by Quick and Pistorius (1994), all of which are relevant in the case of the Cato Manor development.

i) The narrow perception of the environment by authorities, the public, and the private sector;
ii) the lack of an environmental ethic with regard to its sustainable utilisation of the environment;
iii) the lack of informed public and private sector participation;
iv) the inappropriate manner in which decision-makers are advised by professionals;
v) a lack of understanding of the environmental values and/or problems of the urban poor; and
vi) the short-term aims of politicians and the lack of will to take necessary decisions which are unpopular.

These issues result in a lack of commitment towards environmental management and therefore sustainable development.

The lack of an environmental policy to guide development in Durban and regionally is a further factor contributing to a lack of holism in the approach to development. There is no baseline from which to work, resulting in an *ad hoc*, and often reactionary approach towards the environment. This is entrenched by a statement made by the environmental manager of Durban, when she described the prospects for open space planning for the development as being a "vast urban salvage operation" (Roberts, 08.08.1994), whereby whatever open space is available has been incorporated into the open space plan, and will

be managed to maximise ecological functionality without consideration for the D'MOSS system within which this open space is found.

Furthermore, the regional implications of planning a city within a city have not received sufficient attention in Cato Manor. Durban currently does not have the capacity or infrastructure to cope with an increase in population of 200 000 people, and allowances for this are not being addressed by this development. For example, Durban does not have adequate supplies of fresh water available on a sustained basis to provide for the needs of an increased population of 200 000. In addition, the sewerage plants that serve the greater Durban Metropolitan Region are already operating at their capacity. New sewerage plants will therefore have to be planned to meet the needs of an increased population (Roberts, pers comm, 20.09.1994). It is apparent that little attention has been paid to the potential size of the ecological footprint that will be created by the development of Cato Manor.

The formulation of the spatial framework plans for the 8 precincts has been carried out discretely by different planning firms. It is not the task of the CMDA to plan Cato Manor *per se*. Instead it performs a co-ordinating function, ensuring continuity and compatibility between these separate plans. Approaching planning in this fragmented fashion contradicts the principle of holism and is a direct repercussion of a lack of capacity. When there is a lack of capacity to address all the issues at stake (as is often the case in development projects), it must be ensured that there is sufficient interaction between the working groups to ensure that compromises can be negotiated to ensure that all the interests groups are represented.

5.4 CONCLUSION

When considering the extent to which the Cato Manor initiative contributes towards an effective model for sustainable social and physical reconstruction in South Africa, attention needs to be focused on both process and product (Robinson, 1994). The Cato Manor experience underlines the inherent interdependence of each. For just over the first year and a half since the inception of the CMDA, the central thrust of the initiative has been process, rather than product, driven. The process, as set out in the early days of the CMDF, seems to indicate a lot of potential for sustainable reconstruction. However, these same

consultative processes have meant that delivering the products has been wrought with conflict.

It is argued that the delays experienced between the establishment of the Section 21 Company, the appointment of a working team, and the delivery of products on the ground, created large amounts of impatience from the people waiting for houses. This resulted in land and house invasions, which in turn put pressure on the CMDA to deliver products. The planning process was therefore rushed, and political and development needs have taken priority. Although the potential initially existed for the delivery of sustainable products, this has not been the reality of the Cato Manor development. Professor Dan Smit (the CEO of the CMDA) emphasised this when he stressed that the gap between policy and implementation is often difficult to close (1995). This is due largely to the fact that the development is occurring during a period of rapid transition in South Africa's history.

There is enormous flux in every area of policy. The institutional frameworks at national, regional and metropolitan levels are changing. So too are housing policies and procedures. The machinery to implement that policy is also in a state of flux. The CMDA (1994), cites an example of changing policy and the retarding effect that it has had on housing delivery. At the beginning of 1994 policy makers within the National Housing Forum favoured state-provided rental housing. As a consequence, the approach of the CMDA to an allocations policy and other aspects of the project was designed with the provision of rental housing in mind. Six months later, when the fiscal implications of a major rental housing drive were better understood, national policy-makers backed away from rental housing. The CMDA's thinking and project preparation in Cato Manor had to shift accordingly.

The CMDA itself is a product of transition and as the broader environment changes, so pressures will develop for change in the nature and form of the CMDA. The people waiting for homes in Cato Manor are also impatient, adding to the unstable environment, which is not conducive for the implementation of development. The changing environment has offered opportunities for innovation on several fronts, but it is generally acknowledged that some stability in the policy environment is highly desirable for those involved in implementation (CMDA, 1994).

The CMDA has sought opportunities to tackle development decisions in different ways to ensure an equitable redistribution of opportunities and resources to low income people. To achieve this the project needs to be managed with a high degree of competence and efficiency. The Cato Manor development has important repercussions for Durban, and indeed South Africa, as it is potentially the largest and most significant urban development in the country. This imposes a heavy responsibility on all participants to ensure its success. The success of the development is constantly being challenged, as slow progress could result in an invasion of the entire area, resulting in a sprawling shackland. Alternatively, the area could be handed over to large-scale developers who could construct fairly low density housing rapidly, but most of it would be unaffordable by the low income majority of the metropolitan population (Robinson, 1994). Either of these outcomes would be a continuation of past trends.

With the numbers of squatters increasing daily, Peter Corbett remarked in the Daily News (22.11.1994), that

> "if we want to have any hope of seeing the majority of the area (Cato Manor) developed in an orderly way, rather than through uncontrolled invasions, we must have basic services, like roads, sewerage and electricity in place."

The CMDA have responded to the urgent need to produce visible development on the ground, and to test delivery models through pilot projects by initiating two incremental housing developments, the Wiggins "Fast Tracks", in August, 1994 (Plates 5 and 13). The projects are both joint ventures with the Durban City Council and are aimed at low income families, who do not qualify for bond finance. According to the CMDA (1994), the aim of this approach is to allow early settlement of the land and to maximise the residual subsidy for the construction of houses. Costs normally consumed by professional fees, administration and finance charges and expenditure related to tenure registration, needed to be substantially reduced. The "Fast Track" approach (Plates 5 and 13) was implemented with these objectives in mind (CMDA, 1994). Environmental considerations were not incorporated into the fast track developments, as urgent political and development needs took precedence.

Plate 13: "Fast Track" development in Wiggins (Source: CMDA, 1994).

If used constructively, the fast-track developments could provide a sounding board for the kinds of interventions that will be necessary in the rest of the development if sustainable products are to be delivered in the rest of Cato Manor. In addition, information that will be made available by the State of the Environment and Development Project could also feed into the development, aiding the process towards a sustainable framework for development.

Quinlain (1994) makes a general obeservation with regards the marganalisation of environmental considerations when the delivery of low-income houses is urgent. He notes that when there is an imperative to improve immediately the physical and socio-economic conditions in settlements, this threatens any attempt at systematic formulation of well deliberated policies in integrated environmental management. There is a tendancy to restrict analysis of the challenge to political and economic factors and to factors that can be addressed in the short term. This reduces the scope for considering bio-physical processes and their interconnections with socio-economic processes. The account of the development process in Cato Manor clearly demonstrates that this is the case in Cato Manor.

Chapter 6

CONCLUSION: TOWARDS POLICY FOR SUSTAINABLE CITIES

6.1 INTRODUCTION

Based on a critique of urban form in South Africa, this thesis argues for a re-thinking of the place of the environment in city planning. It outlines a preliminary position as to why re-thinking planning from a sustainable development framework is necessary. It is clear that Apartheid planning, as well as a general lack of a positive environmental ethic amongst urban planners, has often resulted in the production of stark, dehumanising environments, particularly for the lower income sectors of society. It is argued that the future formulation and adoption of a sustainable development framework for urban planning will serve to increase the quality of life of all urban inhabitants, especially the poor, as well as maintain the integrity of the natural environment, upon which quality of life is dependent.

South Africa is currently undergoing a period of transition in all areas of policy, and this phase of change provides many opportunities for the incorporation of new ways of approaching city planning. The transition towards the adoption of a sustainable development framework for city planning is not expected to be a smooth one, as it challenges the way in which city planning has traditionally been carried out. The Cato Manor case study brings to the fore the challenges that city planners are currently facing with regards the adoption of a sustainable development strategy. Although the specificities of the case study are particular to the area, Cato Manor is considered here to be a reasonable representative of a typical situation in South Africa. As such, the lessons learned from the experiences in Cato Manor can be translated into a framework for future sustainable develoment strategies for South African cities.

This final chapter outlines the opportunities and challenges that exist for the incorporation of sustainable development into urban planning. Cato Manor is used as a practical case study to further emphasise these constraints and opportunities. The case study points towards the specific issues that policy on urban restructuring should address.

6.2 POST APARTHEID SOUTH AFRICA: OPPORTUNITIES AND CHALLENGES FOR SUSTAINABLE URBAN DEVELOPMENT

6.2.1 Restructuring the city and the RDP

It is clear that the conditions of inefficiency, inequality and unsustainability created by the combined application of apartheid policies and traditional planning practices are in need of restructuring as they form a serious obstacle to future urban development. Because land use is so closely bound up with environmental change, land use planning demands the translation of abstract principles of sustainability into operational policies and decisions. However, alleviating the plight of the urban poor requires more than just infrastructure provision and upgrading. It requires spatial interventions to restructure the apartheid city and thereby assist in reorienting its socioeconomic dynamics. This necessitates the maximising of effectiveness and efficiency in urban areas by striking a balance between sustainable long-term development and short-term political pressures and demands (Urbanisation Task Group, 1994).

Where official policies in the past have ignored the role of apartheid in creating poverty, and where the apartheid structures have been unrepresentative, undemocratic and highly oppressive, the Government of National Unity has adopted the ANC's Reconstruction and Development Programme (RDP), the prime focus of which is to redress these injustices and in so doing rebuild the nation and the economy.

The RDP makes an important link between reconstruction (which includes a redistributive element) and development. It is argued that this "is in contrast to the argument that growth is needed before development is possible, an approach which would leave intact the severe regional, racial, gender, and structural imbalances that characterise the present economy. To prevent this from happening, reconstruction and development must be an integrated process." (RDP, 1994). If an appropriate urban restructuring policy is adopted, this would imply that urban growth might be seen as a process in which both sustainability and development can be achieved concurrently.

In the interests of sustainable development, all citizens should adopt a positive, participatory and consultative approach to the RDP, its further development and implementation.

However, it would be naive to assume that the RDP provides a blueprint for solving the question of sustainable development. The RDP is a document of intent, aimed at feeding into policy, and hence does not have the power to implement its goals. It still requires testing, reshaping and revision to cater for the unique variety of South Africa's needs, values and conditions (Walmsley *et al*, 1994). The need for further research is particularly important at the local level as development priorities and environmental conditions vary between communities and municipalities. The *State of the Environment and Development Report* currently being carried out for Durban is a model example of a local initiative aimed at increasing the information base for sustainable development.

6.2.2 The RDP and Local Agenda 21

In formulating a strategy to achieve sustainability in South African cities, it is fortunate that the country has, at the top of its political agenda, accepted the RDP. Almost all of its aims, objectives and areas of action are congruent with those advocated in Agenda 21 and that were echoed at Global Forum '94. This is a model example of how the power of a changed political and democratic climate can contribute towards the production of an enabling environment for the inclusion of a sustainable development framework (Walmsley *et al*, 1994). Local Agenda 21 is an initiative that provides working examples of how to translate the principles of the RDP into tangible actions and concrete products (Dominique, 1994).

Dominique (1994) outlines the similarities between the RDP and Local Agenda 21 as follows:

> "While the priority area for the RDP is the alleviation of poverty by meeting basic needs, the emphasis of the RDP is on integration, creating opportunities for linkages between areas, promoting conditions for synergistic outcomes, and identifying solutions and interventions that cut across all areas so that resources can be harnessed in a coherent and purposeful manner. Its attainment requires a vision-driven approach based on a people-driven process, based on developing consensus over the real nature and extent of the problems at hand and based on a consensus about and commitment to the means of resolution.
>
> Similarly, Local Agenda 21 motivates for mobilising people to initiate their own development, for establishing a framework for consensus on priorities, and for establishing a framework for developing partnerships between

> communities and government. It looks to meeting basic needs within the context of building human resource capacities, building the economy, and democratising the state...It is a process that contributes to redesigning and reconstructing existing activities to serve more appropriate, sustainable ends."

Local government is the level of government best able to respond to the needs of the people, and is hence best suited to initiate and implement sustainable development strategies.

6.2.3 Local Government and Structures of Governance

Of key importance to the success of implementing sustainable development within the RDP is the restructuring of local governance structures. In the absence of effective governance in cities, including the institutional means to ensure the provision of infrastructure and services, environmental "brown agenda" problems are greatly exacerbated. For local government to be effective, it needs to reflect the democratic conception of governance as articulated in the RDP and it needs to move beyond the conception of government as the administration of a bureaucratic machine to a new mode of interactive governance (Dominique, 1994). An interactive model of governance must create management systems that provide for learning, adapting and changing, and hence requires a transparent, accountable and enabling local government (Dominique, 1994 and Urbanisation Task Group, 1994).

In addition, financial systems that can mobilise resources and ensure efficient delivery are necessary. The efficient use of city resources is, on the one hand, affected by urban structure and form which can generate or militate against opportunities for the poor, and on the other, by the way in which development is managed (Urbanisation Task Group, 1994).

Increasingly, local government is faced with the problem of how environmental management can contribute to meeting basic needs and fostering economic development without compromising the natural resource base upon which development depends. Local Agenda 21 provides the basis on which to tackle this issue. It recognises that local authorities cannot protect the environment or provide environmental services without the

commitment and support of local communities. The importance of a participatory planning process for the success of a development project has been highlighted in the Cato Manor development process.

6.2.4 Popular consciousness of environmental issues

Although the role of local government in attaining sustainable development is fundamental, it is not the only component that will ensure the success of the initiative. The urban-dwellers themselves play an important role in shaping the way in which the environment is dealt with. South African urban society is clearly divided along class lines which translates directly into a division in the experience of environmental concerns along the "green" and "brown" agendas. Although the poor (the majority of whom are black) have typically lived under conditions of squalor and disease, environmental issues are only just beginning to be actively addressed.

Clark (1994) suggests three reasons for this lack of environmental activism amongst the urban poor. Firstly, it is suggested that the virtues of economic growth ring truer to them than a concern for the environment. Secondly, there is perhaps a lack of a deeper understanding to link environmental degradation with other more immediate concerns such as health and well being. And finally, and perhaps most importantly, the urban poor did not regard themselves as permanent citizens of the urban environment and thus did not place a great deal of importance in a location that is not their true home. The consideration of this kind of consciousness is a fundamental component of any strategy of sustainable development in a reconstructed South Africa.

A potential barrier to achieving sustainable development relates therefore to awareness and the ability to change people's attitudes and value systems. Walmsley *et al* (1994) suggest that a sustainable development educational campaign, supportive and inclusive of the RDP, be launched.

6.2.5 Gender Concerns

In formulating policy towards sustainable city functioning, the role played by women, especially those who live in poverty needs to be acknowledged. Women are often more

vulnerable to environmental hazards than men (Clark, 1994). Women's work in the reproductive sphere is not valued, and it is most often the task of women to address the subsistence needs of the family. This translates to a direct relationship with the natural environment. It can be argued that black women are the most disadvantaged group of urban dwellers within the urban sector. Environmental policies must therefore translate into greater equality for women. This is supported by the goal of the RDP and Local Agenda 21 that emphasises social equality.

6.3 CATO MANOR: LESSONS FOR SUSTAINABLE RECONSTRUCTION OF SOUTH AFRICAN CITIES

The case study of Cato Manor illustrates some of the challenges that will face future inner city development. The lessons learned from the Cato Manor experience could serve to feed into future projects of this nature, as well as into policy for urban restructuring.

6.3.1 Institutional Fragmentation

The Cato Manor development has inherited the historical legacy of institutional fragmentation that was typical of cities during the Apartheid era. This fragmentation has resulted in a large amount of conflict and controversy, both prior to the development initiatives for the area, as well as presently. From the time Cato Manor was cleared of its inhabitants under the auspices of the Group Areas Act, until the 1980's, debates on the future of the land were largely as a result of parcels of the land being owned and controlled by different authorities. The uncertainty resulting from splintered control over the area could be regarded as being a key factor responsible for the delay in the initiation of formal planning for the area.

The early development of Cato Manor by the House of Delegates has created huge problems with which the CMDA have to face. The allocation of houses in this development was based on race, which discriminates against a large proportion of the urban poor, which is inconsistent with the principles of the RDP as well as Local Agenda 21. The inappropriateness of a development of this nature has been illustrated by the controversy surrounding house invasions that occurred in Wiggins in late 1993. In addition, the plans of the HoD were not integrated with the rest of the structure plans for Greater

Cato Manor, and are consequently incompatible with the vision for the rest of the area. The HoD development serves to hinder the attainment of a holistic plan for the GCMA.

6.3.2 Lack of Holism and the environment

A lack of holism in the Cato Manor development can be attributed to institutional fragmentation, as well as the difficulty of shifting from a reductionistic to a more encompassing method of planning. The urgency and political pressures for rapid development has not given the planner sufficient time to adapt to a new way of thinking about planning. This has made it difficult for environmental issues to be prioritised in the development.

In addition to this lack of holism, environmental issues have also been peripheralised in the development due to a general lack of a broad environmental input which includes "brown agenda" issues. This can be attributed to the limited environmental capacity of the planning team, as well as the narrow scope of the brief of the Environmental Working Group. The Environmental Working Group's contribution to the plans was of a limited potential, as it focused on open spaces and storm water management only. In addition, the regional environmental implications of the development (ie. the size of its ecological footprint) were given scant consideration.

Rydin (1992) attributes the marganalisation of the environment by planners to the trade-offs that must be made when planning decision-makers are faced with the need to balance the claims of environmental policies against those for economic development and social equity. The outcome of such trade-offs are determined by a number of factors including the ideology of councillors, planners or planning inspectors; the amount of political pressure brought by various outside groups; and the direction of central government advice and control. All these influences have not worked strongly towards the prioritisation of the environment in the planning process in Cato Manor.

6.3.3 Community support and commitment

The Cato Manor development shows how community involvement in planning can serve to simultaneously retard the development process, as well as determine its success. It has

been shown that a lack of consultation with the broader community of GCM at the time of the HoD development resulted in much friction. The CMDA have attempted to prevent this from re-occurring by consulting with the community at all stages of the development. However, this has resulted in substantial delays to the development process.

The delays associated with the negotiations with the communities could possibly be attributed to power struggles within the communities themselves. In addition, the people have high aspirations with regards to the type of built environment that they envisage for themselves. The people are also impatient, as they have been historically deprived of urban housing. It is therefore necessary that development on the ground is made visible as expediently as possible without neglecting environmental concerns.

It is also important that despite these urgencies, when development does occur, this must not be approached in a reductionistic manner. Although the priority in Cato Manor is housing, other facilities, including schools, clinics, community centres and parks should be delivered simultaneously in order to achieve a holistic development that incorporates "brown agenda" concerns; including overcrowding, unsafe water, inadequate sanitation, land degradation, and indoor and urban air pollution.

6.4 GENERAL CONCLUSION

Enabling all people to be citizens of South African cities is the first step towards sustainable urban development. As long as poverty and inequality persist, people will be forced to continue using their environment in an unsustainable way. Providing a minimum level of basic rights and services to the population is a first step towards addressing the "brown agenda" and ensuring sustainability in South African's cities.

However, whether or not social justice is intrinsic to the concept of sustainable development, it is clear that equity, economy and environment form a set of inter-related, and sometimes conflicting goals. To achieve all three in ecological cities will be an immense challenge: society has considerable difficulty in achieving even two at a time (Owens, 1994). In order to achieve these goals to attain urban sustainability, political, economic and social transformations are required. In addition, Owens (1994) points out

that the relationship of the planning system to other agents of urban change and environmental policy must be addressed.

The period of transition in South Africa has provided the opportunity for the incorporation of a sustainable development framework in the Cato Manor development, as well as other developments of a similar nature. However, the case study has illustrated that there are a number of stumbling blocks that have yet to be overcome. The road to sustainability will not be a smooth one. Policy with regards urban restructuring will have to take on board the challenges of partnerships with communities, holistic environmentally sensitive planning, and the legacy of institutional fragmentation, as priority issues.

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Roberts, Debra.	08.08.1994.	Environmental Manager, Urban Design, City of Durban.
Roberts, Debra.	24.09.1994.	Environmental Manager, Urban Design, City of Durban.
Roberts, Debra.	23.03.1995.	Environmental Manager, Urban Design, City of Durban.
Robinson, Peter.	26.05.1994.	Chairperson. Cato Manor Development Association.

APPENDIX ONE

LIST OF PARTICIPANTS IN CATO MANOR DEVELOPMENT FORUM

African National Congress
Association of Housing Developers
Cato Manor Action Group
Cato Manor Residents Association
Cato Manor Squatters Committees (4)
Chesterville Residents Association
Democratic Party
Durban City Council
Durban Housing Action Committee
Hostel Dwellers Association
House of Assembly
House of Delegates
House of Representatives
Inkatha Freedom Party
KwaZulu/Natal Joint Executive Authority
Labour Party
Natal Association of Home Builders
Natal Civic Working Committee
Natal Provincial Administration
National Party
Ningizumu Township Council
Operation Jumpstart
Port Natal/Ebodhwe Joint Services Board
Queensburgh Town Council
Regional Development Association (Durban)
Ridgeview Quarries
Solidarity Party
University of Natal
Ward 15 Residents Association
Westville Town Council

APPENDIX TWO

LAND OWNERSHIP IN GREATER CATO MANOR

Source: Greater Cato Manor Development Forum (1992)

PRECINCT	EXTENT (Ha)	OWNERSHIP
Maryvale	300	Westville/private
Chesterville	110	Ningizuma/Durban Corp.
Chesterville Extension	168	Ningizuma/Durban Corp.
Ridgeview Quarry	142	Durban/Ridgeview Quarry
Bonella	150	House of Delegates
Wiggins	242	House of Delegates
Umkumbaan North	39	House of Delegates
Umkumbaan Central	79	House of Delegates
Umkumbaan South	92	NPA/Private
Cato Crest	95	House of Assembly
University of Natal (ptn of)	160	University of Natal/Dbn/House of Assembly
Bellair (ptn of)	120	House of Assembly/private
Hillary (ptn of)	210	Durban/Private
Sherwood (ptn of)	37	Durban/House of Assembly
Westville Triangle	20	Private
TOTAL	**1964 ha**	