Integrating Planning and Environmental Considerations in Kwazulu-Natal: The Case of Durban's Southern Industrial Basin

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CHAPTER ONE

INTRODUCTION

There is a widespread reference to the 1990's as 'the decade of the environment' and environmental concerns are receiving unprecedented attention with international focus on all aspects of the environment (Jones, 1991). Just like new information technologies, environmental considerations or environmental sustainability are 'transforming the way we produce, consume, manage, live and die...' (Castells,1989).For planning, this transformative nature provides a major opportunity to capitalise on, particularly, if the major objective for planners in Natal is to foster 'harmonious development'(NTRPC) and lead planning into the 21st century.Doing otherwise would often mean that achieving enduring environmental benefits through the planning system could be lost.

IMPORTANCE OF THIS STUDY

By the late 1980's, environmentalism was unequivocably a mainstream concern and the international movement was one of the most powerful forces in global politics. For development planning, the publication of the *Bruntland Report* of the Word Commission on Environment and Development in 1987 was an event of profound significance (Harrison,1995). Environmentalism, as a social and cultural movement, during this time redefined debates within mainstream planning.

In 1992, the United Nations Earth Summit added yet another international impetus towards incorporating environmental considerations in development and planning interventions. The finalisation of a global action plan for sustainable development, called *Agenda 21* means that environmental considerations must

be accorded significance by planners together with social, political and economic concerns.

The publication of the book, *Local Agenda 21 Planning Guide* in 1996 by the International Council for Local Environmental Initiatives (ICLEI) also suggests a new fresh look at examining interrelationships between environmental sustainability and planning.

Within South Africa, the significance of these international developments regarding the environment attained significance as well. In acknowledging this significance, a number of official statements point to the official stance taken by South Africa:

"the Reconstruction and Development Programme (RDP) represents a vision for the fundamental transformation of South Africa...by creation a sustainable and environmentally-friendly growth path"
(RDP White Paper,1995).

"The Department of Environmental Affairs and Tourism's (DEAT) mission for environmental impact management is to integrate environmental impact management with all development activities to ensure an optimal and sustainable development path..."
DEAT's Position Statement on National Growth and Development Strategy,1996).

"Everyone has a right:

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

b) to have their environment protected through reasonable legislative and other measures that:

* prevent pollution and ecological degradation;

* promote conservation;
* secure ecologically sustainable development and use of resources while promoting justifiable economic and social development.

(The National Constitution, Chapter 2 of the Bill of Rights,1996).

For both these global and national commitments to sustainable development, town and regional planning is very significant. Planning is a mechanism by which sustainable development goals could be implemented. Therefore, sound town and regional planning cannot be achieved without due consideration of the environment (Jones,1991). This importance of environment to planning is also acknowledged by planning academics. In a 1995 paper, Harrison suggests that Environmental Planning should be one of the new areas of importance to planning for inclusion within planning teaching programmes.

AIMS AND OBJECTIVES

The overall aim of this study is to consider the extent to which environmental considerations have been incorporated into planning in Kwazulu-Natal in the past and whether new planning instruments such as Strategic Environmental Assessment, Integrated Development Plans and Development Plans offer better prospects for integrating environmental issues into planning. This broad aim has a number of objectives:

1.To provide a theoretical framework which sets the context for debates around environment and planning.

2.To provide an overview and critique of past planning legislation, policy and practice in Kwazulu-Natal, particularly, from 1949 to 1995, in relation to the extent to which environmental concerns have been incorporated into planning.

3.To assess the contribution of [past] procedural instruments such as Environmental Impact Assessment (EIA) and Integrated Environmental Management (IEM) towards the integration of environmental considerations into planning.

4.To consider the extent to which the current planning approaches such Strategic Environmental Assessment, Integrated Development Planning and Development Planning provide an opportunity for integrating environmental issues into planning, with particular reference to Durban's Southern Industrial Basin.

5.To make recommendations that pertain to planning and environmental considerations.

RESEARCH PROBLEM

As it will been demonstrated by the Southern Industrial Basin, Kwazulu-Natal is a complex region with different aspects such as the natural environment, economic development, social development and political imperatives impinging upon one another.The resulting effect of these dynamics has spatial applications, which are usually conflictual when they go unmanaged.Thus management is the major imperative that brings into focus planning intervention as a mechanism by which to avoid environmental conflict.Avoiding and resolving environmental conflicts depend largely on the degree to which environmental imperatives are incorporated into mainstream planning.As will be shown, **in Kwazulu-Natal,the incorporation of environmental considerations into planning is the major problem and therefore, poor management of environmental conflicts is here to stay as long as environmental considerations occupy a marginal position in planning**.Past planning legislation and policies are a testimony to this statement.

RESEARCH QUESTION

This particular research question is framed with a view to criticising past planning legislation and policies in Kwazulu-Natal, as these took a narrow focus regarding environmental development.

To what extent have environmental considerations been incorporated into planning in Kwazulu-Natal in the past and do new instruments of planning offer better prospects for integrating environmental issues into planning?

SUBSIDIARY QUESTIONS

1.What are the past policies, land use controls and planning legislation that pertain to planning and the environment?

2.What is / was the impact of procedural instruments such as Environmental Impact Assessment and Integrated Environmental Management as well as the new Strategic Environmental Assessment towards integrating environmental concerns and planning?

3.What is the current context for planning and the environment.Do the new planning approaches provide a wider scope for integrating the environment and planning?

4.What are some of the important recommendations that could be made from this study?

HYPOTHESIS

The new planning approaches such as Strategic Environmental Assessment, Integrated Development Planning and Development Planning offer a wider scope for incorporating environmental considerations into planning and development than previous instruments of planning and environmenatl management .

THE ENVIRONMENT

The term environment should not be understood from a narrow perspective that was associated with past planning. Past planning used to interpret the term from a purely human viewpoint such as those terms like "amenity". The term 'environment' was also bio-physically based. This understanding failed to recognise the role played by the environment beyond simply providing pleasant surroundings (Draft Planning and Development Act,1996).

An advanced understanding of the term "environment" incorporates as its basis the natural system, but also extends to include the built system, social and economic aspects. The natural system as such is also a huge concept which embraces important dimensions such as terrestry; air, water and marine environments (Hindson, 1996).

The built system or built environment includes anything made through human intervention which provides the surroundings for human habitation such as housing and infrastructure in general.

Other conditions or circumstances that influence individuals or groups of people are also considered to be part of the environment.For this reason then, one can begin to understand that the socio-economic system is a very crucial factor.From a social understanding,environment could be seen as a providing an opportunity for the appreciation of non-material things such as peace, institutional development, negotiation, tolerance and other forms of cooperation.These are largely attained through education which helps to change people's mindsets about their daily behavioural practices in general and the environment in particular. Health is also a very important part of the social system, in which case there is so much emphasis on less polluting development practices.

On the other side of the coin, the economic system stresses the need for the use of renewable resources and the protection of valuable natural resources. In the case of non-renewable resources, it is important that competitive production by major industrial sectors is undertaken. In simple terms, the economic perspective as it relates to the environment largely stresses the need for sustainability in resource consumption.

RESEARCH METHODOLOGY

Methodological Issues

One of the major objectives of the study was to explore past and present regulatory measures that were used in an attempt to integrate planning, development and the environment. This methodological approach is firstly structuralist in focus as I try to understand power relationships and dynamics that exist among different actors and decision-makers in relation to planning and environmental issues.

Second, the methodological approach was historically-situated as it aimed at locating planning and environmental considerations within a particular time frame. The main focus of the historical context was also on tracing developments around planning and environmental issues in Kwazulu-Natal.

Methods and Tools

Literature Review and Secondary Sources

The major aims of the study were also to contextualise the research problem, evaluate past resolution mechanisms and link these with the new planning instruments. Secondary sources were indispensable in developing a conceptual framework. Moser et al (1975) points to the fact that it is no use hurrying into field research without first consulting relevant and necessary books, journals and other useful secondary material.

In the case of this study, a review of theoretical literature on town and regional planning, environmental issues and different conceptual tools have been used extensively to understand linkages between planning and the environment. Important case studies that have dealt with planning and environmental conflicts formed an important part of the secondary sources. Examples included written information on the St Lucia area in Nothern Natal.

Finally, there was extensive and thorough reading and review of publications on processes and techniques such as Environmental Impact Assessment, Integrated Environmental Management and Strategic Environmental Assessment.

Primary Sources

Much of the study was based on primary research. It was carried out in the form of interviews and discussions with a number of planners and environmental specialists. People who were interviewed could be dividen into the following groups, namely, environmentalists especially those involved with Durban's Southern Industrial Basin, planners in general, but those specifically involved with new planning instruments or a particular knowledge of the Southern Industrial Basin.

This study also looked at some of the important themes such as the Natal Town Planning Ordinance of 1949; the Natural Resources Development Act of 1947 plus its amendments over time (Physical Planning and Utilisation of Resources Act of 1967, Environment Planning Act of 1975 and the 1991 Physical Planning Act). Past and present Durban planning initiatives were also revisited. The records and the role of the Kwazulu-Natal Town and Regional Planning Commission was also valuable in carrying out this study. Important policy plans that pertain to the theme of the study were indispensable in carrying out this research.

CHAPTER TWO

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK ON ENVIRONMENT AND PLANNING

The widespread increase in public concern about environmental issues in general is referred to as the "environmental movement"(Sandbach,1981). This is a modern social phenomena.The planning profession is also a product of a reform movement within modernism that emerged as a reaction to chaos, misery and degradation of the built environment within the 19th century industrial city (Harrison,1995). Therefore, both these two movements are modern social phenomena. This literature review will concentrate its efforts on trying to understand developments of these movements between the modern period up to the present. However, this should not be taken to suggest that prior to the modern period nothing happened regarding planning and environmental considerations.

Concern for the Environment

Attitudes towards the environment change over time. Since the Industrial Revolution up until the second half of the 20th century, environmental concerns were generally of low priority-the prime focus being on economic development. However, there were spasmodic but notable reactions against the environmental consequences of urban and technological change (Sandbach,1980). These reactions varied from concerns about health, the preservation of natural areas, materialist development through to anarchist proposals involving small scale production and communitarian existence. It was these varying reaction that led to the formation of "environmentalism" of the 1960's and 1970's (Jones,1991).

The 1960-70's saw the relationship between humans and their natural environment become a topic of widespread concern.Developed countries became deeply affected about environmental problems such as resource scarcity, pollution, degradation and reduced soil fertility as a result of agricultural practices.During this period, scientific and popular books were published.There was a build-up of media interest and specialists' journals around environmental issues (Sandbach,1980).

These developments were also accompanied by the creation of new government institutions and a variety of legislation were passed. In Britain, the Royal Commission on Environmental Pollution was set up, the Department of Environment was created and the 1974 Control on Pollution Act was passed (Sandbach,1980). In the United States of America, similar developments took place as well.The first general environmental legislation was the 1969 National Environmental Pollution Act which provided for the preparation of Environmental Impact Statements(EISs) by all federal agencies (Rachman,et al 1996). There was also a marked growth of environmental societies and pressure groups during this time.

The 1980's were characterised by a more sober response to environmental problems, but widespread concern was generated around problems such as ozone depletion, global warming, desertification, pollution and many other associated issues. Around the globe, it became increasingly clear that ignoring environmental problems would be folly as these are a universal problem and affect us all (Walmsley,1991).

Heightened environmental awareness during this time was also facilitated by a rapidly growing body of theory relating to the structural causes of environmental decline. These "political economy analyses" argue that the above mentioned

environmental problems are symptoms of a relatively slow but catastrophic process of degradation and destruction, the structural cause of which lie within the political economic relations of a given area (Jones,1991).

The 1990's is widely regarded as the decade of the environment. Environmental issues are now a dominant and mainstream. The paradigmatic shift within development planning has resulted in the newly popularised notion of 'sustainable development' with environmental considerations finding their way back into a central position within development programmes (Harrison,1995). There are plenty of examples that point to the widespread concerns about the environment at a global level. The United Nations Earth Summit Agenda 21 programme as well as the Local Agenda 21 /Sustainable development planning process have already been mentioned.

Schmidheiny et al(1995) points to the corporate involvement in taking action about the environmental considerations. The chemicals industry is, for example, one of the corporate giants that have taken lead step in this regard.This has been done in the first place through the launch of a 'Business Charter for Sustainable Development'. This is a multi-industry initiative which its overall goal is to link economic growth and environmental protection. It is hoped that new forms of co-operation between governments, business and society could help in achieving this goal. The regulatory mechanism to achieve this incorporates the synthesis of economic instruments to encourage innovations and continuous improvement by the private sector (Changing Course,1995).

The 'Responsible Care Initiative' is also an international chemicals industry initiative which calls for the commitment by the industries to improve all aspects of their performance in order to protect health, safety and environment. The initiative began in Canada in 1983 and is being adopted by other countries.In

South Africa, it is being introduced by the Chemical and Allied Industries Association of South Africa (CAIA).

Ethical considerations such as utilitarianism, individual rights and justice are now also discussed in relation to environmental concerns. Utilitarianism stresses the need for achieving the greatest good for the greatest number of people. From an environmental point of view, utilitarianism evokes a consideration of the well-being of the future generations and thus introduces the notion of time into the assessment of the good (Fuggle,1994). This falls neatly within the notion of sustainable development which is about environmental, social and economic development for both the present and the future generations.Individual rights are aimed at protecting human dignity. This ethical consideration is also likely to entrench a culture of a wise use of environmental resources and serious thinking about the environment as most countries have Bill of Rights which ensure the protection of human dignity.Justice,as an ethical consideration, is aimed at ensuring equal distribution of burdens and benefits (Rachman,1996). This is likely to influence attitude change towards thinking about the environment. The notion of justice is being broadened to include a conception of "environmental justice".

Jones (1991) warns against seeing environmental movement as simply a gradually increasing concern. Rather, its development has been characterised by the rise and fall of the environment as a political issue. Furthermore, the concern for the environment is not represented by a homogenous group of people with similar viewpoints as to the causes and solutions to environmental problems. Environmental concerns, she argues, are very complex in their origins and manifestations, and differing ideologies and theoretical frameworks give rise to different interpretations on why environmental concern exists. That having being said, the current environmental movement is very powerful and likely to be very persistent ,particularly, as global environmental problems become serious.

Conceptualising the Environment

Decisions and actions about environmental considerations are built around differing perspectives humanity has towards the environment. Conflicts about how serious present and projected environmental resource problems are and what should be done about them arise mainly out of these differing perspectives. The big question then is what perspective could lead to a high quality of life for the maximum number of people. In responding this question, this next section explores different perspectives regarding the environment.

The Ecocentric Perspective

This approach is largely anti-urban and anti-industrial. It rests upon the supposition of a natural order in which all things move according to natural law (O'Riordan,1981). Man in the natural environment is associated with break-down of the natural web of life and the disturbance of natural harmony. Ecocentrists preach virtues of reverence, humility, responsibility and care for the environment.Low impact technology is what they argue for. Ecocentrists decry "bigness and impersonality in all forms-but especially in the city- and demand a code of behaviour based upon ecological principles of diversity and homeostasis" (O'Riordan,1981).

There are important laws that ,according to the ecocentrists, govern the environment.Among these laws, the first law of ecology states that "we can never completely do our own thing, every thing we do has mostly unpredictable present and future effects on other people and other species". The second law of ecology is based on the principle of interdependence and it states that " we

are part of nature,all living species are interconnected and interdependent" (Miller,1992).

Finally, the approach is concerned about ends rather than means for the utilisation of the natural environment.It is argued that in development interventions, there has to be the use of ecologically sensitive planning and development as well as management practices. For example,Nicolson (1996) argues that this form of planning allows planners to predict consequences of certain actions on the biophysical environment, to provide powerful and useful concepts and general principles which allow a better understanding of the natural world, and to provide useful approaches and techniques for the management of the natural environment (an example of which is the ecosystem approach).

However, despite its popularity and commitment to the environment, this approach has a major weakness.Its focus on the natural environment undermines other dimensions that are critical for development. These are economic development and social/community development. In the present context of South Africa whereby all governments (local,provincial and national) are grappling to meet basic needs ,human resource development and effect of the re-intergration of South Africa into the global economy,this conceptualisation of the environment offers limited opportunities for success. It is so focused on ecology that it ignores human concerns. In South Africa, this is not a politically acceptable position.

Technocentric / Throwaway Perspective

This approach sees the environment as a resource that is unlimited which humanity, as superior to all nature, has to subdue and conquer. It is argued that more production and consumption, the better off is humanity. Unlimited material progress can be achieved through economic and technological development and growth. The most important individual and nation is the one who/ that can command and use the largest fraction of environmental resources (Miller,1992).

This approach is identified by its rationality (the objective appraisal of means to achieve given goals); by managerial efficiency (the application of organisational and productive techniques that produce the most for the least effort) and optimism and faith in the ability of man to understand and control physical, biological, and social processes for the present and future generations (O'Riordan,1981).

However, despite deep optimism regarding human ingenuity through technological and informational development, there are also a number failures and weaknesses associated with this perspective. These following examples are a testimony to this 'blind optimism' that leads to practices which undermine both environmental and community development.

First, externalities are a common feature of the technocratic practices. More production and consumption as well as 'unlimited material progress' go hand in hand with unintended effects such as pollution, accidental poisoning in the case of the chemical industry, declining property values in the case of conflicting land uses and as well as many other related effects. Secondly, it is now evident that technological progress has done little to resolve global environmental problems such as ozone depletion.

Sustainable Development Perspective

This approach to environmental considerations seeks to bridge the gap between the two diametrically opposing perspectives highlighted above. Proponents of this view argue that sustaining the environment and its resources calls for co-operation and understanding of the symbiotic and synergistic interactions that exist among economic, community and environmental concerns.

Miller(1992) argues that "holistic wisdom" and the "wisdom revolution", and not the information revolution are key to sustainability. These entail using knowledge and information in order to understand the Earth and the environment as a holistic, interacting ,interdependent system. Technology and information are not rejected. Rather, these should be used in appropriate, just and humane way to protect- not to degrade and destroy- forms of life on Earth (Miller,1992).

The sustainable development or sustainable view is multidisciplinary. It acknowledges the need for community development so that there is increased self-reliance, basic needs are met, equity is achieved, participation and accountability are ensured. From an economic development point of view, the sustainable approach seeks to sustain economic growth and economic efficiency, expand markets as well as maximise profits, but to do so in a way that ensures that future growth is not compromised. From an ecological viewpoint, the sustainable approach ensures that environmental carrying capacity is respected and that other environmentally-friendly methods such as clean technology and reuse/recycling are used (Local Agenda 21 planning guide,1996).

The major strength of the sustainable development approach is its multidimensional orientation.This is seen by its incorporation of environmental,

community as well as corporate (strategic planning) development strategies (ibid). It is within this conceptual framework that I will assess the incorporation of environmental planning into planning in the past in Kwazulu-Natal.

Planning and The Environment

Historical Connections

The origins of modern town and regional planning could be traced back to the reform movement of the 19th Century. Planning's "Early Modern" period was from1900 to 1914. During this time, the emphasis was on public health. Planning was concerned with separating industry from residence, reducing overcrowding by facilitating suburban expansion, creating garden cities and allowing for more space.This style of planning was referred to as "piecemeal blueprint",which involved limited and relatively small scale interventions at a municipal level (Harrison,1995).

During the 1920-1930's, modern planning was associated with demands for a more comprehensive approach at a national level. It is during this period that strong relations between planning and the environment developed into a recognisable form. Patric Geddes, the progenitor of modern town planning was the first inspirational figure and personality in integrating environmental concerns into mainstream planning. His training as a biologist led him to interpret phenomena of urbanisation in ecological terms. Planning and ecology were seen to have many interests in common such as resource management.Planning responsibility was seen to lie at a environmental 'management level', through policy making and interpretation, meanwhile, ecologists provided 'direct management' (farming, conservation) as well as research that was fundamental in the prediction of likely impacts of development on the environment and spatial relations (Roberts,1984).

The second early contribution was articulated by a group of planners who were later associated with the foundation of the Regional Planning Association of America (RPAA). The group of planners adopted a doctrine aimed at creating conditions that would establish a harmonious relationship between human beings and nature. The doctrine was grounded on boi-ethics that showed a deep respect for the environment and natural processes and against 'cancerous growth in cities' (Roberts,1994). Drawing upon the new science of ecology, conservation and geo-technics as well as established tools of economic and social analysis, RPAA put forward a new prospectus for regional planning. At the centre of their philosophy were the ideas that the cities could only survive in organic balance with the totality of their regional environment and that the way to stop destruction of this organic order was to use natural building blocks of human settlements or 'balanced regions' (ibid). This concept was later experimented in the Tennessee Valley Authority planning project.

A significant contribution by early planners towards the incorporation of environmental considerations into planning was also introduced by Ebenezer Howard's Garden City concept. The concept proposed the development of towns or cities around three 'magnets': country, town and town-country. This concept was aimed at allowing people access to both the natural beauty of the countryside and access to opportunities and other advantages provided by urban environments.

However, despite its commitment to preserve the natural environment,the Garden City concept has been criticised by Jones (1991) for being utopian and idealistic (Jones,1991). She also points out that the Garden City's "green belt" concept loses sight of the fact that urban growth is inevitable.Secondly, workers live in central city areas not because of their choice ,but out of economic reasons. For this reason, she criticises the concept for its discrimination in

favour of the rich.In this regard then, open spaces are seen as a better alternative to green belts as these (spaces) can accommodate development changes.

Lewis Mumford(1938) is considered as one of the fathers of regional planning and conservation.He felt strongly about the importance of nature in cities. His definition of regional planning as *'the conscious direction and collective integration of all activities which rest upon the use of earth as a site, as resource, as structure,as theatre...' which 'involves the modification and re-location of various elements in the total environment for the purpose of increasing their service to the community"* shows his understanding of the interwoven linkages existing between planning and the environment (Mumford in Mabin,1996).

Thus far, these planning contributions were based on the merits of a model of integrated comprehensive development that balance resource use with the social and economic missions of planning. This 'territorial integration'(Friedman and Weaver,1979), which is interaction between the natural environment and socio-economic systems within a territory was soon to be challenged after the post-1945 era.

Harrison (1995) described World War II as the great catalyst that brought the state to adopt the modern planning movement and set up a comprehensive planning system at a national level. The broad vision was 'to create a brand new world from the ashes of war'. Planning was seen as an instrument of reconstruction and historical progress and post-1945 planning was presented as the 'culmination of a century of intellectual Enlightenment'. This period marked what Friedman and Weaver (1979) refer to as 'functional integration', emphasising the role of places and their resources in a wider economic order. Planning became fundamentally based on technocentrism and a deep optimism

in human ingenuity in achieving economic development at the expense of environmental considerations.

Reconstruction and development after World War II was associated with reduced environmental concerns in planning as the emergence of geographers, economists and sociologists shifted emphasis from physical bias to social and economic development dimensions as well as to the effects of land use planning on economic growth (Jones,1991).

However, despite the reduced status and recognition of environmental considerations within planning in the post-war period, some pieces of legislation had environmental components in them. The Town and Country Planning Act of 1947 in the United Kingdom introduced development plans which showed primary land use allocations of for individual major settlements within a planning authority area. The assessment of these land use allocation pattern was based on a number of considerations such as population patterns,employment ,urban facilities and infrastructure as well as environmental considerations such as recreation,mineral extraction and public utility requirements as well as the protection of the countryside.

The other catalyst for the development of environmental concerns in planning is the United States' Natural Environment Protection Act of 1969 ,which as it has been said above, established a structure for co-ordinating all federal environmental programmes. The US Environment Protection Agency of 1970, with its introduction of Environmental Impact Statements added extra powers for serious considerations of environmental issues.

In 1971, the Town and Country Planning Act was introduced in the United Kingdom. This Act integrated the environmental issues into planning by giving the Secretary of the Environment powers and duties to co-ordinate, approve as

well as initiate policies of local area planning authorities. In this system guidelines on the content of the structure plans were issued by the Department of the Environment ,although, detailed content and the precise information taken into account during structure plans' preparation were left to the discretion of the planning authority (Roberts,1984).

The 1980's were a turbulent phase for planning. There was a gradual disintegration of the unifying consensus within planning, a reaction to large scale comprehensive planning interventions such as slum clearance, and a new recognition of the environmental consequences of the ideology of progress(Harrison,1995). This is the period which saw the resurgence of social, cultural and intellectual movements redefining denotes within planning:environmentalism, women's movement, localism as well as postmodernism(ibid).

By the late 1980's, environmental considerations through environmentalism were unequivocably a mainstream concern in development planning.The publication of the 1987 Brundtland Report by the World Commission on Environment and Development provided an immediate stimulus and intellectual context to the issues associated with sustainable development. The Report rejected the dominant technocentric argument that economic development and growth ,and environmental quality were mutually exclusive, whereby the former is achieved through a trade-off with the environment in terms of resource exploitation.The Report,therefore, was a major impetus for the paradigm shift towards sustainable development in the 1990's.

The brief discussion above highlights the fact that interwoven linkages that exist between town and regional planning and the environment are not new. These could be traced back in history ,although, they have been restated in recent years. The broad theme that remains to be tackled is to consider whether there

is still a need for incorporating environmental concerns into planning. This is the subject of the section below.

Is There a Need for Environmental Considerations in Planning

Planning is largely concerned about improving the quality of life and the general welfare of the community concerned. This entails the creation of better living environments which is achieved through both development and conservation (Milton,1994). Achieving this development involves many other dimensions such as social, economic and environmental. In dealing with these dimensions, there are conflicts involved. Planners are the ones who are equipped to deal with these issues and mediate the conflicts. Sustainable development planning processes offer planners an opportunity to experiment in resolving development and environment dilemma.

Town and regional planning comprises more than just merely land-use and physical planning.It provides a system through which communities can address their development problems. The system is also the first line of action for addressing many local and regional environmental problems.When properly undertaken, the system incorporates Environmental Impact Assessment and Integrated Environmental Management as well as the newly popularised Strategic Environmental Assessment. Therefore, the integrative nature of planning makes it the profession that could effectively handle environmental problems and relate these to economic and social issues.

Planning law binds planners to be at the forefront in incorporating environmental considerations into the planning and development process. "Planning law ,at the national, regional and local level has ,as its purpose, the creation of an environment which is conducive to health, safety and welfare of society as a whole. It is an evolving multidisciplinary subject which straddles both private and

public law and takes into account transport,political, social and environmental issues" (van Wyk,1990). The latter two play a pivotal role: social issues,foremost among which is population growth, have a marked impact on the physical environment. In South Africa we are already witnessing the tremendous pressure caused by ever-increasing urbanisation, squatting and homelessness. Environmental issues are relevant to planners, because at the heart of planning, lies the protection of natural resources (Ibid).

As part of the reconstruction and development process in South Africa, the country's three largest cities (Johannesburg, Durban and Cape Town) have initiated Local Agenda 21 programmes in compliance with the Local Agenda 21 mandate adopted at the United Nations Earth Summit in 1992.The aim of these programmes is to develop policies, processes and projects that will promote and ensure that urban development in South Africa is taking place along sustainable development lines.This then calls for a serious consideration of environmental concerns in planning.

Finally, all the new and current national and provincial planning instruments have an environmental component in them.Integrated Development Plans which are national instruments must apart from other aspects deal with environmental sustainability. Terms such as 'health', 'sustained utilisation of the environment', 'optimum utilisation of natural resources' in the national Land Development Objectives, derived from the Development Facilitation Act also point to the significance of the environment to planning.

At a provincial level, Development Plans that are provided for by the Kwazulu-Natal Proposed Planning and Development Act also have an environmental management element. The SEA environmental management instrument, that has recently been initiated by the Durban Metropolitan government as part of its

commitment to Local Agenda 21, also specifies the need for assessing cumulative impacts of development on the environment.

Therefore, it could now be seen from the provisions of sustainable development planning, planning law and national and provincial planning instruments that there is a recognition of the need for environmental considerations to be integrated into planning. The author intends considering planning and environmental considerations in KZN within the sustainable development concept and the new planning instruments mentioned above.

CHAPTER THREE

HISTORICAL BACKGROUND ON PLANNING AND THE ENVIRONMENT IN SOUTH AFRICA AND KWAZULU-NATAL

THE OVERVIEW AND CRITIQUE OF PAST PLANNING LEGISLATION, POLICY AND PRACTICE

A planning framework is largely determined by legislation. Within the context of legislation, planning influences the environment through land use control regulations and policy making. It is within this context that this particular chapter describes the situation between planning and the environment in the past in Kwazulu-Natal. The major aim is to provide an overview and critique of past planning legislation, policy and practice in Kwazulu-Natal in relation to the extent to which environmental considerations have been incorporated into planning.

ENVIRONMENTAL LEGISLATION AND PLANNING

Environmental Conservation Act 73 of 1989

Towards the late 1980's, environmentalism was indisputably a major concern within global politics and development thinking. In line with this rise of public concern for the environment, a relatively wide range of environmental legislation was promulgated in South Africa. However, this legislation was scattered throughout numerous statutes, regulations and provincial ordinances. There was also a multiplicity of authorities with overlapping functions and a lack of co-ordination (Jones,1991). It would then be expected that finding environmental legislation and understanding its implications for a particular activity is no easy matter. Nonetheless, the Environmental Conservation Act 73 / 1989 appears to be the most significant environmental legislation to date. It is, therefore, this particular Act that will be explored in the section below.

The Environmental Conservation Act 100 / 1982 was the earlier Act that laid down the foundation for the Environmental Conservation Act 73 / 1989. The primary purpose of the former Act was to make provision for the co-ordination of all actions directed at or liable to have any influence on the environment so as *to achieve harmonious interaction between man and his habitat* (Government Gazette,1982). However, whilst the Act was the first important and direct piece of legislation on the environment, it failed to live up to its purpose as it did not articulate a formal national environmental policy. Hence it was repealed and replaced by the Environmental Conservation Act 73 / 1989 (Glavovic, 1990).

The preamble of the Environmental Conservation Act 73/ 1989 declared a far wider intent than the mere co-ordination of actions influencing the environment, which was characteristic of the earlier Act. The Environmental Conservation Act 73/ 1989 was enacted *to provide for the effective protection and controlled utilisation of the environment and matters incidental thereto* (Government Gazette,1989).

The Act was a very significant improvement as it accommodated two important philosophical positions. That is, ecocentrism and homocentrism. The purpose of 'effective protection' ,by itself, was consistent with a non-utilitarian ecocentric perspective. Environmentalists who tended towards deep ecology (bio-centric and spiritual approach to nature) would approve of the declared intent (Glavovic,1990). Meanwhile, providing for 'controlled utilisation' was homocentric and consistent with the perspective that the environment and nature as a whole exist entirely for man's utility. In utilitarian terms, the second purpose was best served by the controlled utilisation which would produce sustained yield of natural resources for man's use (ibid).

Whilst the Act was a very significant advance on the earlier Act and in bridging the gap between the two competing perspectives, it was overly ambitious and thus fell short of attaining its objectives in a number of respects. Given the earlier White Paper on a National Environmental Policy and a Draft Bill which later became that Environmental Conservation Act 100/ 1982 and the criticisms thereof, it was

anticipated that the Act would articulate a formal national environmental policy for the country, but it missed the opportunity to do so (ibid). Instead what happened was that, in terms of the Act, the Minister of Environmental Affairs might ,by notice in the Gazette, determine the general policy which was to be applied to environmental matters. The Minister was to do this following consultation and concurrence with the Council for the Environment, Provincial Administrators and as well as various other ministers. Whilst the relevance of the activities and participation of these officials and politicians alike was recognised, the practicality of such a convoluted consensus process was complex and doubtful (ibid).

Secondly, the national environmental policy should have been determined legislatively, not administratively. It should have been articulated in the Act as a matter of substantive law, thereby establishing a conservation ethic as a legislative guide to interpretation and administration for courts and all government agencies at all levels (ibid). Section 2 (3) of the Act provided the Minister with discretionary administrative powers, in that the Minister might at any time, after consultation with the affected agencies, 'substitute, withdraw or amend' the policy. Whilst this should not be underestimated, legislative determination of the environmental policy would have been more effective and enduring, and would also have reduced chances of political nepotism regarding the determination of environmental issues.

Furthermore, by the time the Environmental Conservation Act 73 / 1989 was promulgated, South Africa was already sadly lacking when compared to other countries, particularly those in the developed world, where environmental impact assessments formed an essential part of environmental management. One interesting example is that in 1970, the United States of America promulgated the National Environmental Policy Act. This provided for mandatory environmental impact assessment and also made it mandatory for public laws to be interpreted in accordance with the policies enumerated in the Act. It was a matter of great loss and regret that such an opportunity was not taken up in the Environmental Conservation Act of 1989 (Claasen,1997). A comprehensive legal base from which to evaluate impacts of development would have made a significant contribution towards the

integration of environmental considerations into planning and development. This theme will be dealt with more deeply and carefully under the section on procedural instruments within this same chapter.

Constitutional and legal rights to a safe and healthy environment are an important elemement of a system of environmental safeguards. An Environmental Bill of Rights would contribute much to environmental protection. Prior to the enactment of the Environmental Conservation Act 73 / 1989, these rights were already seen as indispensable in attempts to integrate environment into planning and development in the developed world. It is once again a pity that such developments were not taken up in the Act, whereby South Africans would have a legal right, not as a matter of policy, but as a matter of statutory entitlement to live, work and relax in safe, productive and sustainable environments (Glavovic,1990).

Public participation is also indispensable in attempts to attain environmental considerations. Section 32 of the 1989 Act dealt with the publication of draft notices in the Gazette; prior to the issue of regulations and declarations of policy, interested parties were invited to comment. This was an important provision and was consistent with the principle of public participation in the administrative process, and it marked a theoretical shift from representative to participatory democracy (ibid). However, the provision did not go far enough.

The discretion still remained with the Minister, Administrator or local authority concerned, and there was no provision for review of their decisions, except by those persons whose interests were affected in terms of sections 36 in the Act. Section 36 (1) provided that *'any persons whose interests are affected by a decision by an administrative body under this Act, may within thirty days after having been aware of such a decision, request such body in writing to furnish reasons for the decision within thirty days after receiving the request'* (Glavovic,1990). However, this was a negative feature as it was only those select 'affected' individuals who were able to question the decisions. There needed to be provisions for full disclosure as South Africa's environmental resources are for the entire nation.

In conclusion, it could therefore be safely argued that the Environmental Conservation Act 73/ 1989 was a significant improvement on its predecessor. It provided for the establishment of nature reserves, limited development areas as well as protected areas recognised under international convention and the prohibition of detrimental resource development (see sections 18, 20, 21, 22 and 23 respectively). It also set out those activities that the Minister identified as potentially having detrimental effects on the environment on national and provincial levels (section 21). Regrettably, given all the weaknesses that have been highlighted, the Act fell short of attaining its objectives and the declared dual purpose of 'effective protection' and 'controlled utilisation'.

Since then, there has been some progress towards rectifying the faults of the 1989 Environmental Conservation Act, but much needs to be done. So for example, the National Constitution gives everyone a right to a healthy environment. How this will be implemented is ,however, not certain.

LAND USE CONTROL LEGISLATION AND THE ENVIRONMENT

Natal Town Planning Ordinance 27 of 1949

Industrial, commercial, residential and many other forms of development have an important bearing on the environment. However, this should not be taken to suggest that development and the environment are incompatible. Widespread perception and belief that the environment and development are mutually exclusive are one of the major problems standing in the way of achieving sustainable development. Conversely, by understanding that the relationship between the attainment of environmental considerations and development is not necessarily antithetical, and by incorporating environmental principles into the development process, we could be assured that sustainable development is, indeed, possible to achieve. In this sense, development could serve to maintain the viability of the natural resource base, which attracted development in the first place. Land use control could serve to protect

against unplanned and environmentally-unfriendly development. This was one of the original reasons why such regulations came into being. Land use control regulations (land use planning) are one of the most important tools through which environmental considerations could be fully integrated into the planning and development process.

The Natal Town Planning Ordinance 27, 1949, provided the legal framework through which land use controls were exercised in Kwazulu-Natal. The Ordinance, modelled to a large degree on the British Town and Country Planning Act, had these following provisions:

* the establishment of the Town and Regional Planning Commission;
* the reconstitution of the Private Township Board;
* procedures for the establishment of townships;
* procedures for the establishment of Town Planning Schemes.

In terms of this Ordinance and up to 1985, the principal component for guiding and controlling urban development had been the Town Planning Scheme. Whilst the scheme was effective for land use control purposes, it was clearly inadequate as a forward planning document, hence there was a call to amend the Ordinance and replace the stand alone scheme with a 'Package of Plans' (Harrison, 1996). The first plan in the package was a Structure Plan which outlined broad policy objectives of a local authority and mapped the expected growth of a town over a twenty year period, revised every five years. The Development Plan tied broad development purposes to budgetary and phasing programmes. Finally, the famous Town Planning Scheme, controlled land development in conformity with the provisions of the structure plan and development plan (ibid).

Structure Plans

As it has been highlighted above, structure plans at both urban and intra-urban scale are relatively new in terms of the Ordinance provisions. The purpose of the structure

plan was to lay down guidelines (formulate policy) for future development. Structure planning allowed local governments to stipulate aims and objectives for development. Ideally, all development aspects, physical (that is transportation and land use), environmental and socio-economic had to be addressed and the policies had to be formulated in order to improve the welfare and the living environment of the people concerned (Claasen, in Fuggle and Rabie,1994).

Within Natal, the role of the structure plans in mediating between the environment and development began to be largely recognised during the early 1990's. Jones (1991) found that local authorities in the province during the time felt that there was a strong case for addressing environmental considerations early in structure planning so that these considerations could run through all the stages of the development process. The introduction of the Council for Environment's *"Guidelines for environmental conservation and environmental creation in structure planning for the urban environment"* (1989) and

"Integrated Environmental Management" (1989) by the Physical Planning Directorate of the Community Services of the Natal Provincial Administration further entrenched the importance of structure planning in addressing environmental considerations.

Structure planning created a very powerful but underutilised tool for environmental conservation, because it allowed local authorities to demarcate environmentally sensitive areas and stipulate appropriate action if development in such areas was contemplated. For example, the level of environmental impact assessment which would be appropriate could be stipulated, as well as the desired integrated environmental management process. It was at this stage that potential conflict between development and the environment could, to a large degree be reconciled, by clearly stating policy on development and conservation for sensitive areas (Claasen,1994).

However, whilst all these developments were laudable, in practice structure plans tended to focus on the physical aspects thus neglecting the other aspects such as

socio-economic which are fundamental to the improvement of welfare. Secondly, it has to be pointed out and understood that the structure plan did not in itself protect the environment, but it prescribed policy, procedures and intended action for conservation. Therefore, the structure plan had to be carefully assessed as well to ensure that the plan would not lead to a loss of environmental quality in the area to which it related (ibid).

The other drawback of the structure plan was that the detailed content and precise information taken into account during the plan preparation through to implementation were left at the discretion of the local authority. This meant that the importance of the environmental considerations in the planning and development process was dependent upon the concern of local residents and authorities, with environmental issues discussed in detail and comprehensively in certain areas and limited or non-existent in other areas (Hindson, 1997). The discretionary powers of the authorities should have been seen in a serious light if environmental concerns were to be part of the planning and development process.

Town Planning Schemes

In terms of the 'Package of Plans', the town planning scheme was intended to control the use of land in conformity with the provisions and objectives of the structure plan and development plan. For the most part, the town planning scheme was deterministic and physically-oriented. It indicated the legal use for which land could be utilised as well as the degree of development that was permitted, such as the number of floors, bulk, building lines, land use zoning and parking requirements. Particular areas where special controls were in force could also be demarcated on the town planning scheme.

These land use controls and the rezoning process (where the intention was to change the zoning of land for development purposes) were of particular importance for certain types of environmental conservation. For example, before an application for rezoning could be considered, a local authority could insist on the environmental

impact assessment. The authority could also prescribe conditions for the ratification of a rezoning decision, for instance, that the process of integrated environmental management be applied in the construction of the project (Claasen, 1994).

Furthermore, the physical development controls did bring some order to the development process, as environmental goals were often implicit in the land use process (Jones,1991). For example, the town planning scheme included broad-based environmental concerns by providing for public open space, conservation reserves and river reserves.

The town planning scheme was not without its weaknesses. The town planning scheme as a land use measure had not been and was not specifically environmentally conscious. Not only did the town planning scheme often not include specific environmental controls, but also environmental principles were often not incorporated into other controls. That is, the controls that did exist were environmentally unsound (Ibid). For example, in most local authority areas, the town planning scheme encouraged subdivision into Special Residential lots as the predominant land use and hence "urban sprawl" was not due to an absence of planning and zoning, it was "zoned sprawl" (Kendig,1980).

The town planning scheme also specified controls which were specific to a particular land use in terms of the zoning, and not to the specific location of such a land use. As such zoning failed to protect the environment and prohibit poor development. Perhaps, it might have been important that when drawing up or amending the town planning scheme, development rights were allotted according to the nature of the land and the impact of a given category of development (Jones,1991).

Development control affects the welfare of the people involved. Furthermore, opinions as to what is right and wrong are often subjective, depending on the income group, culture and political affiliation of the beholder and the effect of the decision on him or her. Within this context, Milton (1994) argues it was ,therefore, essential that development control decisions were to be taken on a democratic basis. That is, final

decisions had to be taken by a democratically elected body, who was responsible to the public. This would have allowed the concern for the environment to be viewed as a community issue. However, that was not the case as democracy was considered foreign and to make the concern for the environment each and every one's issue was highly unlikely as other groups felt the environment had to be the concern of the elite and privileged groups.

Need and Desirability Application (N&D) and Township Establishment

Township establishment referred to a legal process which controlled the development of land to provide an orderly arrangement of streets with identifiable service units of property designated for particular uses, over which secure tenure was granted (National Housing Forum, 1995). Township establishment comprised the administrative and legal procedures of the land management system through which approval for the development of land was sought and, was a mechanism through which planning was transformed into implementation and the transfer of tenure was authorised (Von Riesen,1996). In Natal, township establishment required a two-step process. First, the N&D application and then the development application to the Private Township Board.

Need and Desirability applications (N&D's) fell under Section 11 bis of the Ordinance. The section required that the Town and Regional Planning Commission advise the Provincial Premier and the provincial cabinet whether proposed urbanisation or development of land either by subdivision or without was needed. That is, was there a "need for" the proposed development and was the site for development "desirable". The N&D's were thus required for developments on land that was not zoned for the required purpose or which was outside the town planning scheme.

In both N&D's and township establishment procedures, developers were required to a provide a memorandum outlining the need for the proposed development, unique characteristics of the site, essential physical services as well as the relationship of

the land to existing developments. In cases where the land was considered to have environmental significance, the applicant (developer) might have to produce an Integrated Environmental Management plan for the site explaining how development would take place. The planning authority would then assess and evaluate the application in relation to its conformity with the legal physical requirements.

Given the situation highlighted above, the significance of the N&D's and the township establishment procedures towards incorporating environmental concerns into planning and development is appreciated. Nonetheless, there were some weaknesses. In the first place, considerations of the environmental consequences were dependent upon the applicant, matters raised in discussions with the affected parties and on the limited extent to which environmental considerations were required in terms of the structure plan and the town planning scheme (Von Riesen,1996).

Secondly, Integrated Environmental Management and Environmental Impact Assessment alike were only done on voluntary basis. Therefore, there was a great tendency for these to be conducted as a procedural ritual to bypass public opposition.

In conclusion, it must be pointed out that in terms of Section 40 (1), the Ordinance sought *" to promote co-ordinated and harmonious development ...in such a way as will most effectively tend to promote health, safety, order, convenience and general welfare, as well as efficiency and economy in the process in the process of development and the improvement of communications"* . In some respects, this form of regulative planning (structure plans and town planning schemes) was important. In certain areas, there were basic health and safety considerations and there were living conditions that were so appalling and exploitative and thus desperately needed some form of regulation. Examples include those areas where residential development was juxtaposed to industries. Also, protecting the integrity of the environment needed some form of regulation so the Ordinance was important in such cases.

However, there are cases where the Ordinance needed some reorientation. Instead of being reactive, control-oriented and more blueprint, it also had to be development-driven, more proactive and more process-oriented (adapted from Claasen,1994). Within this context, the environment would be seen as forming an important partof the general development process.

REGIONAL PLANNING AND THE ENVIRONMENT

Introduction

A region is a very complex phenomenon. The term "region" itself is very elusive and confusing to define. On the one hand, there are those who insist that the term refers to a supernational concept as in the case of Southern African Regional Trade or the Southern African Development Committee. Meanwhile, on the other hand, others equate it with administrative boundaries, yet others with natural zones such as river catchments. In the context of Kwazulu-Natal, the term firstly appeared to refer to metropolitan areas, but rapidly changed to refer to the notion of a fairly large defined area which included town and country, and which for one reason or another lent itself to study and planning as a unit. In this light, regions were seen as special and particular zones to be identified and defined which in turn could be studied in detail after which plans could be made (Mabin and Harrison,1996). In is in this latter sense that the author understands the region for the purposes of this study.

In terms of the Ordinance, Kwazulu-Natal was not empowered to undertake regional planning at a provincial level. The legal basis for undertaking regional planning was a contested territory. The province's legal advisor at the time pointed out to the fact that the Financial Relations Act only mentioned 'town planning' as a provincial competency. However, interest and anxiety of Natal's first professional planner - Eric Thorrington-Smith to pursue regional planning, (the source of which was his exposure to the regional planning initiatives in the United Kingdom and the Tennessee Valley Authority in the United States of America) led him to prepare a

carefully worded compromise that empowered the Natal Town and Regional Planning Commission to carry out 'regional surveys' (ibid).

However, the Commission was interested in going beyond the survey work, and this saw the Commission successfully soliciting a supportive legal opinion from Senior Counsel. Even in this regard, the Commission acted as the agent of the Natural Resources Development Council (later the Department of Planning). It was only with the Physical Planning Act of 1991 that the role of the provincial government in regional planning was given legal recognition. As the Act was never implemented, provinces had to wait until the enactment of the Interim Constitution in 1994 that regional planning was finally accepted as a provincial competency (ibid).

Whilst, there is so much reference to the Commission in this study, this should not be taken to suggest that it was only the planners in the Commission that carried out regional planning work. There were also other planners outside the Commission, such as Natal /Kwazulu Joint Services Board, who did the work, but the Commission achieved recognition in the field of regional planning. Hence, the saying that regional planning was the "hallmark of the Commission" . Important to mention as well is that, although the legal recognition of regional planning as a provincial responsibility came with the Interim Constitution, there were a plethora of regional planning initiatives and policies alike that were carried out from as early as the 1940's.

Intellectual Foundations

Regional planning in Natal had its intellectual foundations within the regionalist movement that was associated with the thinking of great planning pioneers such as Patrick Geddes and his intellectual successor, Lewis Mumford (Mabin and Harrison).

The sociology developed by Patrick Geddes borrowed from the ecological movement in the biological sciences the idea of interrelated organisms. The notion of human ecology formed the foundation of a regional outlook . "*A region is characterised by its*

existence of a balance, a state of dynamic equilibrium, between its various parts: when any large scale alteration is made in one section of the environment, corresponding or compensating changes must be made as a rule in every other part" (Lewis Mumford in Mabin and Harrison, 1996).

For Mumford and early regionalists, it was within the context of societal equilibrium that they defined regional planning as *"the conscious direction and collective integration of all those activities which rest upon the use of nature as a site, as a resource, as a structure, as a theatre..."* ,and regional planning was seen to "involve the modification and relocation of various elements in the total environment for the purpose of increasing their service to the community" (ibid).

The New Deal philosophy, espoused by Roosevelt and implemented through the creation of regional agencies such as the Tennesee Valley Authority in the United States of America left an indelible mark both in the minds and the work of Kwazulu-Natal early regional planners. Key elements in the New Deal were the regionalisation of development policy and comprehensive planning of river regions. In these river regions, regional planning was interlinked with emerging concepts such as natural resource management (Roberts, 1994b). It was therefore from the work of the early regionalists and the inspiration of the Tennessee Valley Authority that Kwazulu-Natal regional planners derived such concepts as interdependent life-supporting systems, comprehensiveness in planning and the river basin as a planning unit (Mabin and Harrison, 1996).

Regional Planning Initiatives and Policies

This brief excursion into history will serve two important purposes. It will position the relations between planning and the environment within a historical context. Secondly, on the basis of the historical outlook, it will be important to make a thorough critique of the extent to which environmental considerations have been integrated into planning and development.

With regard to the **initiatives** in Kwazulu-Natal, the 1950's marked the watershed for regional planning. River catchments were seen as ideal regional planning units and the Commission initiated a number of catchment plans. The most publicised plan was *Towards a Plan for the Tugela Basin* (NTRC,1960). It is one of the most important regional planning exercise carried out in the province and largely inspired by the Tennessee Valley Authority. Nationally, the plan had been given renewed impetus by the 1955 publication of the 'Report of the Commission for the Socio-Economic Development of the Bantu Areas within the Republic of South Africa' (that is, Tomlinson's Commission). In the report, industrial development based on the policy of industrial decentralisation was a very central theme. Thorrington-Smith saw this as an important opportunity to capitalise on regarding regional planning (ibid).

During the same period, the Umvoti-Umngeni-Illovo catchments were also identified by the Commission as areas to be prioritised after the Tugela Basin. Regional planning work on this 'three river region' started in 1954, and the region included the metropolitan centres of Durban and Pietermaritzburg (ibid).

In the 1960's, the focus of regional planning began to shift towards Durban and Pietermaritburg metropolitan areas. During this time, work on the Tugela continued largely through the research programme of the Commission. It was this waning interest in the Tugela study that stimulated the study of localities within the Tugela Basin. This led to the separate planning reports being prepared for localities such as Ladysmith-Colenso, Newcastle-Madadeni and Dundee-Glencoe, particularly in the 1970's (ibid).

In 1974, the *Natal South Coast Draft Regional Plan* was published (NTRC,1974). The plan recommended ,inter alia, that the elongated spread of development along the coast should be contained in nuclei and separated by undeveloped pockets of land. From this period, very little attention was given to regional planning, with the exception of few subregional planning initiatives such as Port Shepstone / Marburg, Umkomaas, Cato Ridge, Empangeni / Richards Bay as well as the work of the Drakensberg (ibid).

In the mid-1980's, interest in catchment planning resurfaced again. This could partly be related to the move towards increased co-operation between former Kwazulu and Natal. River catchment which cross-cut administrative boundaries thus required the collaboration between these two regional administrations. The early years of this decade also witnessed one of the important regional development initiatives. That is, the *Upper Tugela Catchment Initiative* (1983). This regional planning exercise was partly a response to the concerns of conservationists and the white farming community around the increasing black population within the upper Tugela locations, in the foothills of the Drakensberg. Environmental resource degradation and political considerations were some of the major drives behind the initiative.

Towards the end of the decade, there were two major regional planning initiatives. One was the Ingwavuma Structure Plan (1989) in Maputoland, which was prepared by consultants, amongst which was VARA, for the former Kwazulu Department of Development Aid. The plan looked at opportunities for economic development - agriculture and tourism in particular. Ecological sustainability was also a major concern in this regional planning exercise. The other was the North-East Zululand Plan (1989), which was a regional planning initiative prepared in response to mining and conservation considerations around Lake St. Lucia and Richards Bay areas. The plan had a strong physical and spatial orientation as compared to other plans, part of the reason for this is that the plan was set in a time when the rise of environmentalism had permeated most parts of the country. It is this plan that lay down the foundation for the serious considerations of environmental issues within planning and development interventions.

Apart from the initiatives highlighted above, the history of planning in Kwazulu-Natal is marked by a number of planning **policies** which fall within the ambit of regional planning and development. Regional planners both within and outside the Commission demonstrated active involvement in environmental issues long before the national Department of the Environment was created. This involvement went far

beyond research into policy-making. Most of these policies incorporate the Drakensberg Approaches Policy; Green Wedges Policy; as well as the Wetland Management Policy. These ,therefore, demonstrate that environmental protection has been the dominant theme in the history of regional planning in Kwazulu-Natal. How these relate to the environment is an important theme that deserves some consideration within this study, which is what will be considered below.

Work on the *Drakensberg Approaches Policy* was the most outstanding example of the successful development of a policy to protect natural resources. The Drakensberg area faced enormous development pressure during the 1960's and 1970's as there were numerous application for chalet schemes, caravan parks and many other forms of development resorts. Hence, there was a growing fear that the Drakensberg would be flooded with visitors and development to such an extent that its natural and aesthetic beauty and quality would be lost. Also coupled with these, was the fact the Drakensberg was an area of regional, provincial and national importance as a water-producing area and recreational tourism.

Faced with these complexities, the response was the formulation of the 'Drakensberg Policy Statement' (1976) by Mr Phelan. This policy set out development guidelines, with particular emphasis on water production, environmental protection and the provision of recreational choices. The policy divided the Drakensberg into a number of development zones. The 'Wilderness Heart' was to be managed for the maximum production of water and was regarded unsuitable for any human activity. In the 'Landslide Zone', a low intensity of recreation (few footpaths) were permitted, meanwhile, only hiking and limited rustic accommodation was acceptable at the 'Trail Zone'. Holiday and recreational facilities could be sited within specified development pockets within the 'Drakensberg threshold'. Location in the threshold zone allowed recreational development to take place within close proximity to wilderness areas but nevertheless sufficiently removed to avoid the most environmentally sensitive locations (Mabin and Harrison,1996).

Development pressure in the Drakensberg and surrounding rural areas continued, and so there was a need for development guidelines for both the potential developers and the authorities in assessing development applications for development in the Drakensberg foothills. The result was the preparation and publication of the Draft Drakensberg Approaches Policy (1986) by Bert Martin from the Commission. This policy identified three development nodes and two development corridors within which recreational development could be encouraged. It also recommended that Ecologically-Based, Recreation-Oriented Development Control Schemes (EBROD) be formulated within each of the identified nodes. EBROD was aimed at planning for recreation-oriented development and preventing development from damaging the Drakensberg resource base on which potential future development would depend (Jones,1991).

The final Drakensberg Approaches Policy was published in 1990 also produced by Martin. This was not significantly different from the former one, as it also emphasised the three development nodes but de-emphasised the corridors.

The *Policy Towards Undeveloped Land on the Natal South Coast* (1987), better known as the *Green Wedges Policy* was also significant in demonstrating the importance and recognition that regional planning attached to the environment. This particular policy owed its origins in the Draft Natal South Regional Plan (1974). The policy extended one of the concerns that had preoccupied regional planning in Natal since the 1950's. That is, the protection of the coastal ecosytems. For example, in 1951, the Commission had responded sympathetically to a request by the Southern Natal Public Bodies Association for action to preserve coastal and riverine vegetation in the South Coast.

Development pressures on Green Wedges increased during the mid-1980's to such an extent that the Commission prepared a separate policy document, explicitly re-affirming the need for containing development and retaining green wedges (Jones,1991). In the formulation of the policy, it was pointed out that some compromise between land development and the green wedges might be necessary.

In light of this recognition, the overall intention was not to prohibit development, but to control development in such a way that agricultural, conservation and recreational potential of the green wedges could be recognised and thus maintained. Broadly speaking, the intention was to protect the tourism base of the area as this offered the opportunity for regional development strategies around it.

Wetland Management Policy was also an important contribution that regional planning made in attempts at integrating planning and the environment. The influence of the United States could also be discerned in this regard: *" The lasting benefit that society derives from wetlands far exceeds the immediate advantage their owners might get from drawing or filling them"* (President Carter, 1977)

Wamsley (1987) defines wetlands as water dominated areas with impeded drainage where soils are saturated with water and there is characteristic fauna and flora. Wetlands are amongst the most productive life-support systems on earth and their conservation is important for biological, hydrological and economic reasons. Furthermore, they provide essential habitat for hundreds of species such as waterfowl, fish, amphibians, reptiles, mammals and plants, and act as natural sponges which control floods and droughts. Wetlands have potential agricultural benefits as well (ibid).

Within this context, Dr George Begg of the Environmental Advisory Services was appointed to conduct research on concerns of freshwater wetlands in Natal. He compiled the following reports:

* The extent, role and present status of wetlands in Natal (1986)
* Wetlands in the Umfolozi catchment (1988)
* Location, status and function of the priority wetlands in Natal (1989), and
* Policy proposals for the wetlands of Natal and Kwazulu (1990).

A few recent examples of regional planning initiatives and policies are sufficient enough to illustrate the continued involvement of planning in environmental issues.

Nonetheless, there are areas where there are shortcomings regarding the extent to which the environment was integrated into planning. Within this context the subsequent critique should not be seen as 'fault-finding' and thus downplaying the continued significance planning has always attached to the environment. Rather, the critique should be seen in the context of encouraging the continued involvement, whilst at the same time, avoiding past traps. It is in this spirit that *"whoever supplies memory, shapes concepts and interprets the past will win the future"* (Tom Peters quoted in Harrison,1996).

Critique of Past Regional Planning Initiatives and Policies

The Focus on Water and Catchments

As is it has been shown, early regional planners in Kwazulu-Natal were largely inspired by regionalism and the Tennessee Valley Authority. River basins were considered basic units of planning. Catchment planning therefore enjoyed a high priority in regional planning and there was a strong emphasis on the natural resource base. The central concern in particular was water, as could be seen in these words:

At this time, the Commission will be armed with a map showing in a manner which can be readily appreciated with the extensive development that could be supported by water of the Tugela River Basin ...(Thorrington-Smith, Mt. 32,10/3/54).

While the Tugela Basin and other catchment initiatives were the flagship projects in regional planning, the over-emphasis on water at the expense of other environmental concerns rendered such kind of regional work environmentally unconscious. Water is but one aspect of environmental concern. Thus, seeing the concern for water as an end in itself, as it appeared to be the case in past regional planning, did insufficient justice to the environment. The emphasis on water was related to the use of the river catchments as the planning unit. However, this was problematic as these catchments were not well-defined and economic links and

other regional environmental problems and issues were not primarily within but across the catchments. Thus catchment planning underestimated the cumulative impact that areas abutting the catchments would have on the environment.

Catchment planning also emphasised the importance of the natural resource base by providing details on geology, soil types, climate, protection of river catchments, slope analysis and so on. However, the significance attached to these environmental concerns and the extent to which they were carried through to policy proposals was limiteed and largely dependent on who was responsible for drawing the proposals (Hindson, 1997).

Environment as a Separate Theme

Despite a commitment to a philosophy of *"holism"* , within past regional planning initiatives, environmental concerns were often seen as stand alone and separate from socio-economic and political dimensions. The predominant view among the Kwazulu-Natal planners was that "environmental problems have environmental causes and environmental solutions" (Jones,1991).This attitude gradually changed in the 1980's. An example of regional plan which clearly demonstrated the links between environmental, socio-economic and political issues is the Upper Tugela Catchment Initiatives (1983-1990)

Therefore, crucial would be the need for a holistic understanding of environmental issues, with planners having to play a meaningful role in relation to the environment. For example, through sustainable regional planning, it would be possible to make a shift from seeing "green issues" as a discrete sphere of concern to understanding "green issues" in holistic relationship to social, economic and political concerns.

Legal Enforcement

The serious attention given by regional planning to the natural environment in Kwazulu-Natal in the past predates an international trend towards environmentalism

(Mabin and Harrison, 1996). Even academic personalities outside the planning profession commended the attention that regional planning, through the work of the Commission, gave to the environment. This is shown, for example, by Di Scott-Brown's 1964 article featured in the Journal of American Institute of Planners.

Nonetheless, behind this remarkable support and enthusiasm, there is one important factor that was a blemish on the history of regional planning by the Commission. The regional plans prepared by the Commission were "*always advisory rather than legally enforceable*" (Mabin and Harrison,1996). Thus, the determination of the extent to which regional plans had to accommodate environmental issues was more an administrative issue, dependent upon the whims of a presiding authority. In reality, despite the Commissions's concern, environmental issues were often neglected.

The Lack of Coordination in Environmental Management

The case of the wetland management policy highlights this point. As a result of man-induced factors and the lack of wetland management, over half of Kwazulu-Natal wetland resources have been destroyed, and this "*has led to the conclusion that society can still afford to allow the depletion of Kwazulu-Natal's wetland resource base to continue unabated*" (Begg, 1989). Part of the reason for this was that there existed "neither a national wetland policy nor a uniform legislative system for wetland management in South Africa" (Johnston, 1997). A national wetland management policy would have acted as a co-ordinating framework for wetland management at a regional level. Therefore, while regional policies in Kwazulu-Natal (see Begg's reports above) have recognised the value of wetlands, the significance attached to these was undermined by the lack of a national wetland management policy.

It is only recently that the recognition of the importance of wetland has permeated into thinking at the national level. This has been shown by the introduction of the 1995 Wetland Conservation Bill by the Department of Environmental Affairs and Tourism. This is intended to provide for the application in the Republic of South

Africa of the Convention on Wetlands of International Importance, especially, Waterfowl Habitat, the prohibition of prospecting or mining in listed wetlands, the prohibition of detrimental activities on listed wetlands and catchment areas.

The Lack of Attention to Implementation

Realism is about the fact that planning that is not achievable and implementable does little more than unnecessarily raise expectations and discredit the planning profession. Harrison (1996) argues that 'new realism' ties planning very strongly to implementation, and it suggests that if the resources and instruments for implementation are not available or cannot be realistically acquired, then the planning should not proceed.

The history of regional planning in Kwazulu-Natal is full of these "surprises". The Tugela Basin regional planning initiative was very innovative and interesting in its accommodation of environmental issues (river catchments, natural resource base) and economic development concerns (industrial development) in the 1950's and 1960's respectively. Also, the Ingwavuma Structure Plan in the late 1980's was very creative in its concern for balancing development and "ecological sustainability". But, one of the greatest flaws ever made was that the initiatives were ambitious and there was a lack of attention to implementation. In such a case, one is left with the option of sincerely expressing gratitude to the philosophical contributions that regional planning , through the Tugela and the Ingwavuma Plans, has made in attempting to integrate planning and the environment. When it comes to the practical and real contributions these plans have made to the environment, it is difficult to see them as more than important historical resource documents.

In conclusion, there is evidence that the environmental theme occupied a high profile position in the history of regional planning in Kwazulu-Natal. The influence of international thinking in Kwazulu-Natal regional planning as shown by the ideas of regionalism and the experience of the Tennessee Valley Authority have been very fundamental in informing the linkages between planning and the environment. The

Tugela Plan is one the regional planning flagship projects that demonstrates the point. However, as has been pointed out, despite the general strengths, the lack of implementation in a number of regional planning initiatives has reduced much of the work to merely good intentions.

METROPOLITAN PLANNING AND THE ENVIRONMENT

Introduction

Metropolitan planning in Kwazulu-Natal had two conceptual sources in the post-World War Two period. One was the impact in planning *abroad*, particularly in Britain ,whilst, the other was the *indigenous* impetus to plan racial segregation on a metropolitan scale both under the auspices of the Group Areas Board and under the aegis of the Department of Native Affairs (Mabin and Harrison, 1996).

Regarding the influence of international planning thinking in Kwazulu-Natal, two important personalities deserve mentioning. Thorrington-Smith and Ron Pistorius were key to the development of urban planning ideas and planning practice in Kwazulu-Natal. Both these planning personalities studied in London, and their return to South Africa was a conduit through which British urban planning was transmitted to South Africa. Mabin and Harrison (1996) argue that this could be seen by the fact that slums, muddled use of land, lack of open space, and the traffic problems captured much of the urban planning attention in Kwazulu-Natal during the decades after the war. Furthermore, the idea that neighbourhood units existed and could be fostered within already built up space, the notions of rings of density and the relationships between overcrowding and open space proved powerful as well. Planning ideas on industrial development also influenced metropolitan planning practice in Kwazulu-Natal - for example the decentralised Hammarsdale area and the adjacent Mpumalanga residential township (ibid).

The indigenous impetus to plan for racial segregation was also an important theme in early planning in Kwazulu-Natal. The use of land in South Africa was and has always been defined along racial lines, and consequently, this influenced how the

planning system should function. The provisions of the Physical Planning Act as from the 1960's through to the early 1990's impacted on urban planning as well.

Past Metropolitan Planning Initiatives

One of the first metropolitan initiatives ever taken was the 1948 Umlazi Master Plan prepared by Thorrington-Smith. For a long time, the Durban authorities had sought to use Umlazi Mission Reserve as a dumping ground for an unwanted population. The Acting Transitional Council's proposal was " to use portion of the Umlazi Mission Reserve for a controlled squatting camp for the reason that all the shack dwellers could not be accommodated on the Umlazi Glebe Lands in the ownership of the Council " (ibid). In this plan, Thorrington-Smith faced with the rapid population growth in the city and the rising political demand for racial segregation, produced a Greater London-like Plan for Umlazi.

In 1963, the joint committee between the Department of Planning and the Natal Town and Regional Planning Commission was formed. This was called the Pietermaritzburg-Durban Regional Planning Committee. In 1965, the committee approved the application for the development of Phoenix, North of Durban. This was a planned satellite settlement which, under the policy of apartheid, was developed to house the Indian community. Like other newtowns planned around the same time in South Africa, such as Mitchell's Plain in Cape Town and Soweto in Johannesburg, Phoenix has now developed into a dormitory suburb but heavily dependent upon the Durban metropolitan core.

In the 1970's, the Pietermaritzburg-Durban Regional Planning Committee proceeded to produce plans ,but then in line with the guide plan requirements. Guide planning had been instituted under the old Physical Planning Act 88 of 1967. Two important plans produced were the Pietermaritzburg-Durban Regional Guide Plan of 1973 and the Durban Draft Guide Plan of 1974 (NTRPC, vol. 24 & 28 respectively). Both became documents extensively referred to, but neither became statutory plans under the 1971 Act (Mabin and Harrison, 1996).

The early 1980's saw the launch of one of the most important initiative dealing directly with the environmental issues. This was the Metropolitan Open Space System. It was initially launched by the Commission initially in Durban in 1983 and then in Pietermaritzburg in 1987. The initiative was intended " to establish and maintain the most efficient open space / trail system which will link established and potential conservation areas within metropolitan areas" (Nicolson, 1988).

In order to achieve its goal, MOSS set out these objectives : biological conservation; trail system; recreation; education; visual amenity as well as river protection (Roberts, 1987). Roberts argued that the need for such a system emerged out of research which showed that natural open areas reduce the formation of heat islands in the city; reduce air and noise pollution; decrease run-off and the risk of flash flooding; provide various aesthetic and psychological benefits; provide valuable recreational, social, educational and research opportunities; and, could, with the correct planning and management, ensure the preservation of stable and diverse communities of local indigenous flora and fauna.

By the late 1980's, metropolitan areas in Kwazulu-Natal were hubs of acute concerns for social, economic, political and spatial dynamics of change. It was within this context that Tongaat-Hullet Group initiated a Strategic Planning Process for the Durban Functional Region. Members of the Forum that were involved in the process were drawn from a variety of disciplines, reflecting the dynamics of change. However, whilst the initiative was important and very innovative in strategically revealing some the dynamics that would lay the foundation for 21st century planning and development, it failed to develop as expected by the sponsors (Mabin and Harrison).

Between 1990 and 1995, there were a plethora on metropolitan initiatives, particularly, in the Durban Metropolitan Area. These include, inter alia, Spatial Development Plan for Port Natal/ Joint Services Board Region (1992); A Normative Framework for Guiding and Assessing Development Initiatives and Future Planning

Work in the DFR (1993); A Short-Term Strategic Plan for the DFR (1994), and Towards an Urbanisation Framework for Metropolitan Durban (1995). Almost in all these initiatives, there is a combination of themes. Gradually, the natural environment began to take a more important place within these initiatives, but as will be shown below, the way environmental issues were addressed remained problematic.

Critique of Past Metropolitan Planning Initiatives

Sprawl

As shown in the discussion of the initiatives, key concepts that have been fundamental to metropolitan planning are the reservation of land on a racial basis, the choice of deconcentrated new town areas for future industrial development, the urban fence ('urban development boundary') and the green belt idea. The practical application of these concepts led to low density sprawl in metropolitan areas, and the direction of which has largely been unmanaged.

The application of the Group Areas Act through metropolitan planning during the 1960's, together with establishment of the new suburban townships for Black and Indian occupance, resulted in considerable relocations of Blacks and Indians within metropolitan cities. A sectoral urban form, structured according to the dictates of the "racial wedges" emerged, and where removals had been effected, major "scars" were left (VARA, 1992). Examples of such scars are Block AK and Cato Manor. These are environmentally-unfriendly. At a more simple level, these areas present a poor visual image and are not conducive for recreational purposes. Such important concerns as biological conservation and trail system are not recognised and respected in these areas. At a broader level, these areas reduce important economic benefits that could be derived the environment. That is, tourism, which is one of the sectors that is internationally acclaimed as globally competitive in terms of economic gains.

The green belt concept (or urban fence) was very central in attempts to prevent uncontrolled and destructive urban sprawl as well as to preserve some elements of nature in metropolitan areas. Nonetheless, it was quite justifiably accused as idealistic and utopian . In the first place, urban growth in cities was inevitable, but the green belts prevented the urban expansion necessary to accommodate this growth. Secondly, locating the poor across urban development boundaries failed to recognise the impact

this would have on the poor. The resultant effect was increased income and transport expenditure on the poor, and so the green belts encouraged the discrimination of the poor in favour of the rich.

Sprawl in the context of Kwazulu-Natal thus had the following environmentally-related problems :

* informal housing, in the form of illegal squatting and informal settlements, such as Inanda;
* energy consumption and air pollution, such as the Industrial Complexes in South Durban;
* loss of resource lands, such as open spaces (Block Ak) and agricultural lands in North Durban areas;
* perhaps, "environmental deprivation: the absence of elements that provide activity and stimulation. The physical uniformity of sprawl is the source of environmental deprivation. So, is the lack of neighbourly interaction or strong communities of place, where neighbours interact, have a sense of belonging and a feeling of responsibility for one another" (Ewing, 1997).

Lack of Integrated Planning

Land uses, urban elements, races and income groups were all separated to the greatest degree possible in past metropolitan planning, and in particular, the separation of places of work and residence, was deeply entrenched in the philosophy of urban management (Dewar, 1992). Within this context, Dewar

criticises past urban planning on the grounds that there was little overt planning in the sense of consciously seeking to achieve positive environmental outcomes. Much metropolitan planning wasted society's scarce resources such as land, energy and finance, resulting in extensive environmental destruction and pollution. Within townships, urban planning led to public spaces that are inhospitable, dangerous and frequently serve as a dumping ground for rubbish, severe atmospheric pollution, large amounts of residual land - awaiting new or expanded facilities- that in all probability will never materialise by all sense of human scale, and there is no tradition of making positive open spaces (ibid).

Elitist Concern

Past planning legislation, policies and land use controls, which were generally useful and made a contribution to environmental considerations, did not sufficiently acknowledge the existence of the problems faced by the poor, particularly, the black population. Legislation and land use controls tended to protect the environment for elitist groups (Claasen,1994). In the past, the concern for the environment in metropolitan planning has been seen as an activity for the " *concerned and responsible citizens, who are overwhelmingly members of the middle class and of the new petty bourgeoisie, with generally modest goals such as the preservation of open spaces and pursued by the wealthy for the wealthy*" (adapted from Enzesberger, 1976).

Important, therefore, is the fact that metropolitan planning in the past reflected a class bias and lack of the idea of a unified public interest that was so central to the way in which planners legitimised their profession since Post-World War Two. Previous planning attempts never really succeeded in integrating metropolitan planning and the environment. It is in this context that Jones (1991) argued for " environmentally concerned planning to reflect the values and aspirations of all population groups, if the key issues are to be addressed and if conservation and environmental concern is to avoid being an elitist activity". In short, there was a need for less technocratic and blueprint planning and more development-oriented

and socially-responsive approach to planning if the environment was to be meaningful and was to be seriously considered in Kwazulu-Natal.

Ad-hoc Approach

The manner in which environmental considerations were addressed did not provide for comprehensive environmental management. Environmental considerations tended to be incorporated in an ad-hoc manner, depending on the interest, concern and the priorities of local authorities and individual planners. Jones (1991) argues that the South African Institute of Town and Regional Planners should have been very influential in ensuring that the environment was taken seriously. The code of ethics and professional conduct adopted by the SAITRP had little to say about the planner's responsibility to the environment.

A Narrow View of the Environment

The term "environment" and "ecology" tended to viewed as similar and interchangeable in the past metropolitan initiatives. For examples, Metropolitan Open Space System viewed environmental considerations from an ecological perspectives, as if when one addresses ecological problems, so too are then environmental ones addressed. Ecology is the study of the interrelationship between living organisms and their habitat (Fuggle, 1983), meanwhile the environment is more broad, with ecological objectives as one strand in the web. Past planning reference to "ecological sustainability" thus undermined the holistic and integrated framework from which the environment had to be seen.

The environmental theme and policy in Kwazulu-Natal needs to be carried in a new and fresh way. Whilst it is true that from the early years, resource usage and the environmental policy have been dominant themes in planning in Kwazulu-Natal, it has to be acknowledged that the narrow focus on the ecological aspects of the natural environment was so overriding that planning lost sight of social and

economic development dimensions and the need to achieve dynamic balance between the different objectives.

In conclusion, the environmental theme has been prominent in past metropolitan initiatives in Kwazulu-Natal, but the integration of environmental issues with other concerns has been limitedand concepts of the environment have been very restrictive.

PAST PROCEDURAL INSTRUMENTS AND PLANNING AND THE ENVIRONMENT

In addition to the substantive planning and the environmental issues that have addressed above, it is also equally important to consider the impact of procedural instruments that have been applied in the past in an attempt to integrate planning and the environment. This section addresses two of these, that is the Environmental Impact Assessment (EIA) and Integrated Environmental Management (IEM).

ENVIRONMENTAL IMPACT ASSESSMENT

As previously indicated, it was the National Environmental Policy Act of 1970 which established a structure for co-ordinating all federal environmental programmes in the United States of America. It was through the provisions of NEPA that Environmental Impact Assessment came into being. NEPA required that decisions on all federal development projects with significant effects on the environment had to be guided by the EIA (Rachman,1996).

The European Community Directive of 1985 accelerated the application of EIA in European Community Member States. Since its introduction in the United Kingdom in 1988, EIA has been a major growth area for planning practice (Glasson, 1994). Since then, many other countries have either implemented or are in an advanced stage of considering EIA. In South Africa, EIA has generally been voluntary although some authorities have required an EIA for major developments.

Definition

Definitions of EIA abound. Glasson (1994) offers the following pithy definition of EIA as " a *process*, a systematic process that examines the environmental consequences of development actions, in advance" and "the emphasis compared with any other mechanisms for environmental protection is on *prevention* " . Whilst planners have traditionally assessed the impacts of development, it was invariably not in the "systematic, holistic and multidisciplinary way" required by the EIA (ibid).

As a process, environmental impact assessment involves as number of steps. The order of the these steps in the process may vary but usually follows the type of sequence outlined below:

A * Project screening: Is an EIA needed?;
* Scoping: Which impacts and issues to consider?;
* Consideration of alternatives;
* Description of the project development actions;
* Description of the environmental baseline;
* Identification of key impacts;

B * Prediction of impacts;
* Evaluation and assessment of the impacts;
* Identification of mitigation measures;
* Public consultation;
* Presentation of findings in Environmental Impact Statement (EIS);
* Review of EIS;
* Decision-making;

C * Post decision-making;
* Auditing of procedures and mitigation measures.
(Source: Glasson in Town and Country Planning 1994)

Purpose and Importance

Environmental Impact Assessment is a process with several important purposes. It is an aid in decision-making by providing comprehensive and detailed information on the environmental consequences of development (ibid). It is normally wider in scope and less quantitative than other techniques such as the Cost-Benefit Analysis. Whilst it is not a substitute for decision-making, it does however help to clarify some of the trade-offs associated with a proposed development action, which thus lead to more structured and better informed decision-making. As a process, therefore, it has the potential to be a basis for negotiation between a developer, public interest group and a planning regulator, thus leading to an outcome that balances the interests of development action with environmental concerns (Glasson,1992).

Environmental Impact Assessment could also be of great benefit to developers since it provides a framework for considering location and design issues and environmental considerations in parallel. Therefore, it could be an aid in the formulation of development actions, indicating areas where a project can be modified to minimise or eliminate altogether adverse effects on the environment (ibid).

Finally, environmental impact assessment is one of the instruments for sustainable development, that is development that does not harm the 'Earth'. Existing environmentally harmful developments have to be carefully managed. Therefore, in pursuit of social and economic development within an environmental context, the EIA becomes a very useful tool. However, as will be shown, it is not without limitations.

Kwazulu-Natal and Environmental Impact Assessment

In the history of planning in the province of Kwazulu-Natal, a number of EIA's have been conducted, mainly in recent years. These include the EIA for Jozini Wilderness Hotel by the Institute for Natural Resources in 1990; the 1996 Durban's Fibres EIA by the University of Cape Town's Environmental Evaluation Unit and and an EIA for

Mabibi Tourism Development in Maputoland in 1996, by consultants, amongst whom was Prof Diab of the Department of Geographical and Environmental Sciences at Natal University, Durban. However, one famous 'landmark' EIA that sparked much controversy was that for the Eastern Shores of St. Lucia, close to Richards Bay.

Lake St. Lucia is the largest estuarine system in the African continent ,whilst, the St. Lucia region is internationally recognised as a natural area of great conservation value. However, a variety of uses and activities had been allowed even though they posed obvious threats to the continued existence of Lake St. Lucia and its environs.

It is in the Eastern Shores of St. Lucia where planning played a role in the highest profile EIA ever prepared in South Africa. In 1989, there was a major proposal for mining development by Richards Bay Minerals (RBM) on the Eastern Shores of St. Lucia. This provoked a major controversy that still continues. The community in the area was against mining development in the area, basing their concerns on the potential environmental problems that could be incurred. In this context, planners were drawn into the debate by the fact that RBM required the permit issued in terms of the 'Wiley Regulations' (Mabin,1996) . In August 1989, the Chief Town and Regional Planner advised RBM that the Integrated Environmental Management procedure, including Environmental Impact Assessment was required as mining was a high impact activity. While the need for such a permit fell away with the repeal of the Wiley regulations, RBM still needed approval from the Department of Mineral and Energy Affairs, and following massive public opposition, was instructed by the cabinet to conduct an EIA. Planning was represented by town planner, Jan van de Vegte, on the Steering Committee that guided the preparation of the EIA (ibid).

The EIA conducted in St. Lucia marked the culmination of the importance planning have always attached to the environment. Prior to this event in 1978, the Commission had recommended that major provincial developments should be undertaken after considerations has been given to their effect on the environment. It is this which led to the establishment of the Environmental Advisory Committee at the province by the late 1980's (Ridl, 1990).

Weaknesses of Environmental Impact Assessment

There are two important aspects to this subsection. The one deals with the criticisms that are applicable to Kwazulu-Natal ,while, the other focuses on the general weaknesses that are applicable to the Environmental Impact Assessment.

In ***Kwazulu-Natal***, Environmental Impact Assessments played a somewhat limited role and were often believed to be disruptive in the development process. This is because for the most part, EIAs were seen as obstructive and reactive, thus being " annoying and inconvenient hurdles that should be cleared before approval since they lead to a confrontational attitude" (Egan, 1989).

In the context of the Lake St. Lucia EIA, this is quite understandable although not necessarily justifiable. RBM had already expended much time, money and energy in developing the mining proposal when they were informed that there was a need for undertaking the EIA, which perhaps, could be a potential threat to the development process. On the other side of the coin, the EIA also provided the environmenatlly-conscious public with the means to resist what was believed to be a potentially destructive development process. The undertaking of EIAs in Kwazulu-Natal was often done reactively, with the EIAs coming too late, doing too little, and ending too soon.

An environmental regulatory system is very fundamental to environmental management, of which environmental impact assessment in an important component part. In the past, there was a confusion over what fell within a South African regulatory system for the environment and what did not. This reduced the effectiveness of environmental management in Kwazulu-Natal, as well as most other parts of South Africa. Departments such as of Environmental Affairs; Water Affairs and Forestry; Mineral and Energy Affairs as well as Agriculture all had environmental responsibilities in terms of legislation. Provincial and local authorities also had formal environmental functions, as has been alluded to in the previous discussions.

Whilst this departmental involvement is worthy of appreciation, poor co-ordination and lack of integration were endemic, as each and every department had its own motives. 'Player-Referee Syndrome' proved powerful too, as the departments often had to play conflicting roles. The Department of Water Affairs and Forestry managed large parts of water and forestry and was also the environmental regulator of these sectors. The other interesting example that emerged from the case of St. Lucia is that the Department of Mineral and Energy Affairs was responsible for promoting the development of the mining industry whilst at the same time, it had the national legislative responsibility to administer Environmental Management Programmes (EMPRs) to protect the environment against damage from mining. Often, in such cases, the environment became a stepping stone for achieving economic development objectives.

Thirdly, there was no legislative basis for carrying out EIAs in Kwazulu-Natal, as well as the whole of South Africa alike. The situation existing up to 1996 regarding the undertaking of EIAs has been similar to that which existed in Britain prior to the 1988 European Directive. That is, the undertaking of EIAs has been "discretionary" and based on the "wait-and-see" attitude (Bichard 1988 in Jones 1991). Therefore, EIAs were not enshrined in the legislation as a mandatory and compulsory requirement. They were conducted in an ad-hoc manner, on voluntary basis and thus ran the risk of being part of being a meaningless procedural ritual - a pretence of concern and public accountability where the evidence and argument had little influence on decisions (Roberts, 1990).

It is within the above context that ever since the introduction of voluntary EIAs in the 1970's in South Africa, there have been calls for *mandatory Environmental Impact Assessment*. At long last, the government has responded. Environmental Impact Assessment Regulations have been promulgated by the Minister of Environmental Affairs and Tourism in August 1997. The promulgation has been in terms of Sections 21, 22 and 23 of the Environmental Conservation Act 73 / 1989. This marks a major milestone in environmental impact management in South Africa.

This mandatory EIA has four important phases. Consultation is the initial phase which may involve application or pre-application consultation with the provincial department responsible for environmental management. The purpose of this is clarify the requirements of the regulations and procedures to be followed, which in turn will allow the authority to register the application. The scoping phase is for determining the nature and the extent of the development proposal, its complexity and its sensitivity to environmental issues. This culminates in a scoping report which should reflect all the alternatives identified during scoping process, as well as issues raised by interested and affected parties. If there are no major issues identified, the report is sufficient enough for a decision to be made. An impact assessment plan is submitted in cases where the scoping report was 'ambiguous' , and the plan culminates in the final phase, impact assessment report. In the report, it has to be clearly set out how development will accommodate environmental issues and should include the addendum of all the environmental issues raised in the previous stages.

A number of people support this new EIA approach to making planning and development seriously consider environmental issues. The support is based on the following advantages associated with mandatory impact assessment:

* improved quality of environmental design;
* reduced costs of major projects as the approval process will be eased;
* reduced delays and proactiveness in the decision-making process;
* widened opportunities for linking the environment with physical land use planning; and
* increased room or incentive for compromise and communication between actors.

(discussion with Prof. Garland and Dr. Scott, 1997).

However, whilst there are high commendations for these new developments in South Africa, the battle is not yet over. The Department of Environmental Affairs and Tourism in 1996 published an Environmental Management System (EMS) code of ethics. The Environmental Management System is defined as part of an organisation's overall management system that deals with any of its activities that

may have an impact on the environment (Conserva,1996). Put more simply and concisely, it is a system of co-ordinated procedures and resources of an organisation so that it can control its activities that may influence the environment. The EMS helps an organisation to understand the performance that is required of it, measure its current programme, identify potential improvements in performance and, implement an improvement plan as well as track and control activities (ibid). It is important to note that although this is worded with a private sector organisation, EMS could be used in any organisation, including government departments. It is a pity that such a system has not been included or linked as a integral part of the new environmental management system espoused in the 'new' Environmental Conservation Act 73 / 1989.

General Weaknesses of Environmental Impact Assessment

Whilst the role of Environmental Impact Assessment has been an important advance in tightening the relationship between planning, development and the environment, there is a great concern in some quarters about the quantity and even the quality of the environmental impact activity. *Current practice is the proverbial 'curate's egg' - good in some parts and this raises questions about whether we are in danger of expecting too much from the environmental impact assessment* (Glaason,1994).Therefore what environmental impact assessment is doing *is not enough* (Claasen,1997).

Firstly, environmental impact assessment has a narrow conception of 'the environment'. The term as used in environmental impact assessment is seen from the bio-physical perspective (Glaason,1994). This is unfortunate as the term is multidimensional. Environmental impact studies in Australia have pointed to the fact that for the purpose of the environmental impact assessment, the meaning of the environment should incorporate physical, biological, cultural, economic and social factors. The socio-economic impacts together with biophysical aspects should merit a high profile in the EIA, because it is often the trade-offs between the biophysical and the socio-economic factors that is crucial in decision-making(ibid). Its

unfortunate that in practice, the biophysical aspects have tended to occupy an overly dominant position. Widening the scope of the environment should thus be an important part of future environmental impact assessments.

The Environmental Impact Assessment also does not have a sharpened methodological content as the Environmental Impact Assessment process and the resultant Environmental Impact Statements often lack balance (ibid). They tend to be skewed towards the early stages of the development process, focusing on project description and baseline environmental description, with much less consideration of impact identification and evaluation. Even the early stages may not be covered well since alternatives are usually not considered and project descriptions may be too sketchy, with the prediction of impacts, the evaluation and the assessment of their significance being normally particularly weak (ibid).

Unequal power relations with the Environmental Impact Assessment process is also one of the major strains in the development process. The various key actors in the environmental impact assessment process - the developer, the affected parties and the general public, the regulators at various levels of government, and the facilitators such as various consultants - have differential access to and influence on the outcome (ibid). There is a great concern, therefore, that the environmental impact assessment is too developer-driven and not as honest and unbiased as it should be, particularly since the developer or developer's consultant carries out the EIA. Within South Africa, the 'new' mandatory EIA does the same thing and operates on the same principle. It is the developer ("applicant") who appoints an independent consultant, and the relevant authority then oversees the EIA process. While public participation and consultation are provided for, these are marginal as the final decision and the criteria for assessing such an EIA lies with the relevant authority and this often takes place 'behind the doors' (ECA, 73/ 1989, section 21 (1) (3)).

As practised in South Africa and internationally, environmental impact assessment is often accused of failing to extend into monitoring and auditing. The EIA primarily relates to the period up to the decision being taken on a project. Good environmental

impact assessment should be a means to obtain good environmental management over the life and death of the project and this should involve the monitoring and auditing of the interaction between the project and the environment after the decision. Wherever possible, these should take place throughout the construction, operation and the run-down of the project. However, considering the fact that EIAs in Kwazulu-Natal usually came late, did little and ended too soon, it would be expected that monitoring and auditing mechanisms have not played such a significant role.

Finally, a hard core approach to integrating the environment, planning and development would need to evaluate, not only projects as the environmental impact assessment does, but also policies, plans and programmes in terms of sustainability considerations (Hatch, 1997). The environmental impact assessment is not equipped to deal with these. It is site-specific and widely applied to single developments such as an individual factory. It thus fails to accommodate cumulative impacts of development over time and address more strategic questions. Given the goal of achieving sustainable development, it seems logical, if not essential, to apply an assessment of the environmental consequences of all relevant development policies, plans and programmes, which the environmental impact assessment is not methodologically equipped to deal with.

In conclusion, the environmental impact assessment has been an important advance on the previous approaches such as Cost-Benefit Analysis in mediating between planning, development and the environment. As environmental problems permeate all sectors of the global society, it is equally important that procedural instruments aimed at environmental efficiency permeate a whole spectrum of the development process as well , from its life until the death. It is in this regard that the environmental impact assessment needs backing from up-to-date procedural instruments, fully armed to teeth in dealing with the environmental considerations. More strategically-oriented approaches which have an added advantage over the EIA thus need exploration, which is what the next section considers.

INTEGRATED ENVIRONMENTAL MANAGEMENT

The South African Council for the Environment in 1984 established a committee to recommend a national strategy to ensure the effective integration of environmental considerations in all levels of public and private sector decision-making and the resultant development actions. Following a comprehensive research project, the Council identified the need for a process of guiding and documenting all development decisions to ensure the protection and the wise utilisation of the environment. The process was termed Integrated Environmental Management. Subsequently in 1989, the Council released a document entitled *Integrated Environmental Management in South Africa*, which was intended for use by decision-makers, professionals, developers, managers as well as planners and the general public.

Definition and Process

Integrated Environmental Management is defined as a procedure for guiding the development process, a framework for harmony between development and the environment, and the objective of which is to integrate environmental considerations in all stages of the development process in order *to achieve the benefits of development with minimal harm to the environment* (Council, 1989). The central idea is that development and environmental quality could be had at the same time, but only if there is an efficient procedural framework and a co-operative spirit between the key actors. The guiding philosophy behind all these is that there is no contradiction between the ultimate goals of conservation and development, as both are concerned with improving the social well-being in the present and the future.

There are four major aspects to the Integrated Environmental Management process:

* careful environmental planning and design;
* a reiterative process of proposal assessment and modification;
* an open and accountable decision process; and

* enforceable mitigation programmes (Egan, 1989).

These aspects parallel and are linked to the four stages in the progression of any development. These stages are a summary of the Council's document *Integrated Environmental Management : A Framework for Harmony between Development and the Environment* (1989).

1. ***The Proposal Generation Stage*** involves recognising some need, conceptualising alternative ways in which that need might be met, and then refining these alternatives to come up with specific versions that can be assessed for the general viability and desirability. The key actors at this stage are the development proponent and the regulative authority. It is also a stage process which involves defining the purpose and the need of the proposal; searching for viable and more environmentally acceptable alternatives to the proposal; investigating the environmental effects of the proposal and its alternatives, and as well as selecting alternatives which are to be formally assessed.

2. ***The Assessment Stage*** has as its objective the careful and comparative assessment of the implications of the alternatives, and this involves the identification of impacts on both the social and natural environment, and the identification of the nature of these impacts. The Assessment stage involves decision on the kind of assessment that is needed; investigation of the environmental impacts, consultation with interested and knowledgeable parties and, a review of the draft environmental report.

3. ***The Decision Stage*** is aimed at the identification and the formal approval of the best alternative, and involves reviewing all the relevant information and deciding on the action to be taken; determining the conditions of approval; formally recording the decision, and, if the decision is contested, an appeals procedure is initiated.

4. ***The implementation stage*** is about instituting and managing the selected alternative in accordance with the terms of approval. It involves the application of a

monitoring programme and undertaking of selected audits to assess the IEM process.

Strengths

Integrated Environmental Management is much broader in scope than the Environmental Impact Assessment. The Environmental Impact Assessment is related to one of the four stages of the IEM. Over and above the EIA that is undertaken during the assessment stage, IEM also ensures that environmental factors are taken into account from the development proposal stage, to decision-making up to the approval and implementation of the development project (Council, 1989). Integrated Environmental Management, therefore, plays a more positive role in guiding the development process in that it ensures that environmental input is taken into account in all stages of the evolution of the development process.

In contrast to the often obstructive and reactive EIA, IEM ensures that no expensive commitments are made to proposals which are environmentally unsound. There are " no surprises" in the development process when carefully laid plans are suddenly found to have environmentally unacceptable consequences. Confrontation and conflict between the key actors are kept to the minimum, delays from appeals and "court battles" are avoided, and the expenses of redesigning and re-evaluating the development proposal are saved (Egan, 1989).

Integrated Environmental Management is based on the philosophy of interdependence of conservation and development. Consequently, IEM more than being a procedure for careful planning, assessment and implementation, it is also a way of thinking (Jones,1991). The implication for planning is that conservation should not be practised in a narrow preservationist sense, but rather should be incorporated as an ethic or approach.

Weaknesses

Despite being a major advance on the environmental impact assessment, there are concerns that Integrated Environmental Management is not enough. This relates to the manner in which it has been undertaken both in Kwazulu-Natal (St. Lucia) and South Africa as well. Firstly, the IEM procedure, just like the EIA, prior to August 1997, was not mandatory. It therefore would be unlikely for it to have that widespread impact until translated into an implementable legislation. Were it not for the massive public opposition to the mining development proposal in the Eastern Shores of St. Lucia, it is likely that the necessary mining lease would have been approved without Integrated Environmental Management being undertaken.

Integrated Environmental Management appeared to be good at a theoretical level, but was not clear in terms of practical applications (Raimondo,1990). For example, it envisaged public participation (key actors) as an important opportunity in the decision-making process but how exactly this would work and how feasible this amount of participation would be in terms of money, time and energy was questionable. Therefore, IEM supported the notion of public participation without recognising the complexity of practically administering that process. The term was also very elusive to define at the time as racial laws made others sectors of humanity 'invisible and also unheard', in which case what constituted 'public' was a contested domain.

The other drawback is that IEM regulations focused and still focus on specific projects and thus did not allow for either the evaluation of regional development strategies or for sectoral development strategies. Within this context, Claasen (1997) argues that there is a need for IEM to cater for sectoral sustainability. This is because each and every economic sector has a different demand for environmental resources and there are also differences in the contribution (jobs, foreign exchange, technological development) each sector makes to sustainable development. Therefore, where there is competition

between different sectors for limited resources, the efficiency in resource use (demand / contribution equation) should thus be taken into account.

Finally, IEM regulations concentrate only on the potential impacts of specific activities or projects without making provision for spatial differences in environmental sensitivity. There is thus a strong case for strategic environmental management plans to be accommodated into IEM . A strategic environmental management plan is a spatial decision-support system which highlights critical environmental elements, and the most important feature of such a plan is that it divides land into zones of differing environmental sensitivity (ibid). Should it be accommodated within IEM, the function of such a plan could be to provide a framework and a perspective from which to view all other environmental management instruments, as well as a point of departure for environmental debate and decision-making.

In conclusion, IEM has been very useful in contributing to the recognition of environmental considerations in planning and development circles. Its incorporation of the EIA as an integral part of it has also been a major advance. Nonetheless, it still has to face the new challenges such as accommodating sectoral sustainability and strategic environmental management plans if the objective is to be holistic enough in terms of sustainability considerations.

CONCLUSION

This chapter has reviewed and evaluated both past planning practices and instruments for environmental management. These have included: the Town Planning Scheme; the Structure Plan; Regional Planning; Metropolitan Planning; Environmental Impact Assessment and Integrated Environmental Management. To some extent, each of these instruments have have contributed to environmental objectives and yet each has been limited and poorly applied. Effective environmental management and planning has not yet been achieved in Kwazulu-Natal. However, the new political dispensation means

new opportunities to achieve these goals. These opportunities will be examined in the next chapter.

CHAPTER FOUR

INTEGRATING PLANNING AND THE ENVIRONMENT:

THE CASE OF DURBAN'S SOUTHERN INDUSTRIAL BASIN

Introduction

Previously, it was pointed out that new planning approaches such as Strategic Environmental Assessment, Integrated Development Planning and Development Planning offer a wider scope for the incorporation of environmental considerations into planning and development than past instruments for planning. This chapter begins by making a comprehensive and detailed introduction of these approaches.

STRATEGIC ENVIRONMENTAL ASSESSMENT

Introduction

In recent years, several international writers in planning have highlighted the strategic planning process as ,perhaps, in the best position to secure the vital integration between socio-economic development and the natural environment. The debate set in the context of sustainable development has been inconclusive often foundering on the twin rocks of institutional unwillingness and institutional technical inability to undertake leaps needed to secure the symbiotic relationship between socio-economic development and the environment. Central to the debate was the fact that Strategic Environmental Assessment is a potentially valuable approach and a way forward to effectively mediate and balance between development and the natural environment (see Glaason, 1992; Hardy & Lloyd, 1993; Roberts, 1994; Glaason,1995).

Within South Africa, the potential role that could be played by Strategic Environmental Assessment is also recognised, as could be seen by this statement: *Strategic Environmental Assessment is the most recent improvement to the way in which environmental issues can be addressed. In South Africa, SEA has the potential to ensure that the principles of IEM are incorporated in proposed plans and policies. A review of recent international literature on SEA shows that there is little that can readily be adopted in South Africa. Instead, it is imperative that we develop, test and apply a form of SEA that meets the need of environmental management in South Africa, addresses the shortcomings of project-specific Environmental Impact Assessment and bridges the gap between planning and Integrated Environmental Management* (SEA Primer, 1996).

The author also continues on the same note that, as there is an international and national shift away from fixed and uncompromising land use planning and development control towards attempts to facilitate sustainable development in its broader sense, SEA offers a wider scope for the incorporation of environmental considerations into planning and development.

Context

Ever since it was first introduced through NEPA in the 1970's, Environmental Impact Assessment has been undergoing a number of changes and modifications aimed at improving its effectiveness as a tool in decision-making. However, some fundamental limitations of the underlying science of project specific EIA have become painfully obvious. International literature points to the fact that EIA operates as a 'stand-alone' process poorly related to the project cycle; is unable to address cumulative impacts, particularly for large scale development projects where secondary developments could occur, and offers limited opportunities for effective public participation in planning and development or decision-making processes (Hatch, pers. com,1997). Whilst the Integrated Environmental Management has

become accepted good practice and tried to address these weaknesses, it did not effectively do so as IEM principles were not properly applied earlier in planning and policy-making (ibid).

Within the context of South Africa and Kwazulu-Natal in particular, experience with the use of EIA points to a number of problems surrounding it, including *inter alia*:

* misperceptions of EIAs by developers as either stumbling blocks to development approval or as tools to stop development -a view held by Non- Governmental Organisations;
* the lack of an established legal framework for EIA;
* limited commitment from developers and authorities to address downstream development and linked infra structural development for large projects;
* the raised expectations of stakeholders and interested parties that their concerns would be addressed in decision-making as a result of participation in an EIA; and
* a lack of an established review procedure for EIAs and the lack of skilled reviewers in government (ibid).

Definition and Purpose

Strategic Environmental Assessment can be defined as *the formalised, systematic and comprehensive process of evaluating the impacts of a policy, plan or programme and its alternatives, including the preparation of a written report on the findings of that evaluation, and using the findings in publicly accountable decision-making* (Therivel, 1992). *It is a process of anticipating and addressing the potential environmental consequences of proposed initiatives at higher levels of decision-making, aimed at integrating environmental considerations into the earliest phase of policy, plan or programme, on par with economic and social considerations* (Sadler, 1995).

The rationale for SEA is :

* To ensure that environmental issues are addressed in a proactive way in policies, plans and programmes;
* To improve the scope and assessment of cumulative impacts, particularly where large projects stimulate secondary development and where many small developments not requiring EIAs may occur, and
* To focus on sustainable development, by facilitating the application of sustainability principles and guidelines (SEA Primer,1996).

Strengths

Most of the major strengths of Strategic Environmental Assessment are inherent in its being different from Environmental Impact Assessment. Whilst the latter tends to focus on the mitigation of impacts of activities rather than determining their justification and siting, SEA is a proactive tool for environmental management. International studies on SEA point to the fact that it has adopted many of the techniques of EIA. However, the *tiered approach* -the ability of SEA to be applied to different stages of plans and policies as well as decision-making, makes it more reliable over EIA. This should not be taken to suggest that the role of EIA is over, as there will always be projects under most of development programmes and so too will the EIAs.

Emerging out of this study as well as interviews are the following advantages of Strategic Environmental Assessment. SEA:

* Is proactive and informs development proposals;
* Assesses the impact of the environment on development;
* Addresses areas, regions or sectors of development;

* Is a continuous and flexible process that is adaptive and responsive to development changes;
* Assesses cumulative impacts of development and identifies implications and issues for sustainable development;
* Focuses on maintaining a chosen level of environmental quality;
* Has a broad perspective and a low level of detail to provide a vision and overall framework for development; and
* Creates a framework or a benchmark against which impacts and benefits of development can be measured.

Implementation

Literature review on international experience reveals a number of important lessons for implementing the SEA. The SEA Primer (1996) summarises these as follows:

* The initiation of the SEA is a critical step since it includes screening of the proposal and obtaining the participation of stakeholders and community groups;

* The SEA approach must be tailored to the way policy and decision-making actually works, which is often not in a logical or hierarchical sequence; and

* Screening of policies, plans or proposals is needed to determine the most appropriate and effective stages at which SEA should be applied.

From the brief discussion given above, it could be seen that SEA is rapidly emerging as an important environmental management tool in ensuring the symbiotic relationship sought in planning, development and the environment.

INTEGRATED DEVELOPMENT PLANNING

Introduction

Under the New Constitution in South Africa, local government has a broad and expanded role to play. Over and above the provision of traditional municipal services such as water and waste management, municipalities must now lead, manage and plan for development. In conjunction with national and provincial governments, local government has a task of eradicating poverty, boosting local economic development and as well as implementing reconstruction and development. Therefore, there is now *a new developmental role of municipalities* (Department of Constitutional Development, 1997). This new developmental role of the local government entails maximising economic growth and social development; integrating and co-ordinating the activities of other agents -including other spheres of government - within a municipal area in terms of co-operative governance, and as well as democratising development (Ministry for Provincial Affairs and Constitutional Development, 1997).

Integrated development planning is thus seen as one of the important approaches for developmental local government. At present, Integrated development planning is currently a dominant form of large area planning and used to plan for the future of metropolitan areas in South Africa. As such, Integrated development planning and / or Integrated Development Plans also offer a wider scope for integrating the environment into planning and development.

Context

The legislative context from which Integrated Development Planning emerged is the Local Government Transition Act 97 / 1996, which requires every local authority to prepare an Integrated Development Plan within which their annual budgets should be framed. In terms of the Local Government Transition 2nd Amendment Act 97 of 1996, the Integrated Development Plan is defined as a *plan aimed at the integrated development and management of the area of jurisdiction of the municipality concerned in terms of powers and duties, and which has been compiled having regard to the general principles and key matters which are defined in section 28 of the Development Facilitation Act.* The IDP's are thus introduced as statutory requirements for all local authorities including both regional and metropolitan councils.

In outline, the plan must deal with:

* The provision of a range of municipal services;
* Economic development of the area;
* Planning for the physical form of the urban area;
* Environmental sustainability; and
* Land development, especially housing opportunities.

Process

Integrated development planning is a process rather than a product, with IDP's as business plans and programmes of action that are driven by local objectives to be used by municipalities, rather than physical or structure plans. It establishes a development programme or plan for the short, medium and long term; sets budgets to enable the implementation of the programme; monitors and evaluates

implementation, and finally allows for an ongoing process of change and improvement to the programme (Department of Constitutional Development, 1997).

As a process, Integrated development planning involves a series of steps and activities:

* Current reality (broad view): This planning activity entails understanding and getting a fairly clear picture of the current development context of a municipality. This step involves a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, which is aimed at overviewing an institution or a local government body; an area and its communities (local context) and as well as the external planning and development environment such as the global, national, provincial and regional or sometimes subregional context.

* A Vision Statement: Based on the information from the first step, this step involves establishing a community vision for development. A Vision Statement is aimed at building a base for agreement and consensus to start the planning and development process and harness a broad base support for future development initiatives.

* Goal-Setting: This is about clearly setting goals for development, and these need to be realistic and reflect on the broader collective priorities of the community. Avoiding too many goals is important as these could be too complex and sophisticated to deal with.

* A Situational Analysis (detailed, focused analysis): This is a more in-depth, detailed and focused analysis than the other activities. It provides a deeper insight into the key development issues and is a key to strategic planning in the Integrated Development Planning process. This planning activity involves analysing the *status quo*, trends and needs; SWOT analysis, and as well as the spatial analysis of an

area. Out of the Situational Analysis, social; economic; physical / spatial planning and environmental aspects of the area should be clearly understood.

* An Integrated Development Framework: This is a set of development strategies which cut across different development sectors. The multi-sectoral nature of the IDF allows different sectors to be able to support one another;

* Incorporating Land Development Objectives: In terms chapter one, section 28 of the Development Facilitation Act, an Integrated Development Plan must deal with LDO's. The Development Facilitation Act divides the subject matter of the LDO's into four main areas. These are objectives relating to:

+ Services, in which case the municipality must set out the sort of activities and standards of services it will provide and as well as the level at which the services will be provided;

+ Urban and rural growth and form, most of which fall within the traditional town and regional planning profession. These are the integration of areas settled by low-income communities into the municipal area, the sustained utilisation of the environment and natural resources, the planning of transportation and the provision of bulk infrastructure, the co-ordination of land development and as well as land-use control;

+ Development strategies, which involve the facilitation of the optimal involvement of all sectors and subsectors of the economy in land development, access to finance for land development and as well as administrative structures and capacity to deal with land development; and

+ Performance targets such as the number of housing units, sites and other facilities being planned for. This also relate to determining whether such units, sites and

facilities will be delivered by means of upgrading of land or existing settlements, undertaking new land developments or the letting of land and infrastructure. Finally, setting time periods within which such targets must be met is also another area of crucial concern.

* Action Planning and Budgeting: These entail linking the development strategies, including the LDO's, into implementation. An Institutional Plan of Action spells out the manner in which the municipality will implement its strategies within the available resources at its disposal. One approach to this might be draw up an Action Plan for Councillors or alternatively an Institutional Action Plan for various departments. An IDP must also include a Financial Plan, which is a strategy aimed a regular budgeting and allocation of resources so as to meet the development strategies. There are short-term (1 year), medium-term (5 years) and as well as long-term (up to 25 years) Financial Plans.

* Monitoring and Review Procedures: These are intended as means for measuring the municipality's performance in meeting the development needs and as well as enabling the municipality to revise, adapt and adjust the IDP as development conditions and priorities change. The Key Performance Targets set out in the IDP provide important indicators for measuring the performance of the municipality.

* Provincial Approval of LDO's: The Development Facilitation Act requires that LDO's of the IDP be submitted to province for approval. This is intended to ensure that the IDP is a legally binding product that will thus influence developments in a municipal area.

As it was the case with Strategic Environmental Assessment, the extent to which Integrated Development Planning is a useful planning approach for dealing with environmental considerations will be treated in the section under se in the Southern Industrial Basin. For now, let use turn our attention to Development Planning.

DEVELOPMENT PLANNING

Introduction

The need for participation has a particular bearing and impact in sustainable development. The critical link between the principle of participation and the concept of sustainable development lies in the fact that various sections of the community constitute a potential resource of knowledge, energy and skill that could be harnessed for planning and development purposes. In Kwazulu-Natal, there is a dire concern that all sectors of the community must be drawn to the process of planning and development so as to ensure the development of a culture of training in the use of planning as a development tool, empowerment of individuals and communities and as well as responsibility for development (Proposed Planning and Development Act, 1996). Therefore, there is a strong case for designing processes of public participation to ensure communication and involvement so that people's needs are defined, addressed and integrated into the planning and development. Within this context, the Natal Town Planning Ordinance 27 / 1949 do not facilitate these new objectives of planning, as the Package of Plans, namely, the Structure Plan, the Development Plan (budgetary framework) and the Town Planning Scheme are too sophisticated and rigid to be applied to all levels of planning and authority. To achieve a planning and development process that is interactive, consultative and which meets strategic priorities which are linked to budgeting and financial management as well as to monitoring mechanisms, there is a proposal to introduce Development Planning in Kwazulu-Natal.

Context

The future legislative basis for development planning or Development Plans in Kwazulu-Natal is the Proposed Planning and Development Act, which will be enacted late in 1997 or in 1998. The legislation is intended as a means of ensuring effective, co-ordinated, sustainable and equitable development of land. The underlying intent is that physical planning or spatial arrangements need to be set out in policies, plans and programmes at appropriate scales, and sectoral policies and priorities must be co-ordinated through the legislation.

The proposed Kwazulu-Natal's Draft Planning and Development Act provides a binding set of general principles to be applied in planning and development throughout the province. The Act allows for the reconstitution of the Natal Town and Regional Planning Commission as a Kwazulu-Natal Planning and Development Commission, in accordance with Section 11 of the Development Facilitation Act. It also allows for the replacement of the Town Planning Appeals with a Planning and Development Appeal Tribunal, which is an equivalent of the Development Appeal Tribunal in the Development Facilitation Act. Chapter four of the Act establishes the substance of and the responsibility for Development Plans throughout the province, which thus replaces the Package of Plans provided for by the 1949 Ordinance.

Important is the need to point out that the Development Plans (DPs) in terms of the proposed legislation are an equivalent of the national Land Development Objectives. As could have been seen in the discussion of the integrated development planning process, there is a close relationship between IDPs and LDOs, though they are coming from two different legislative streams, with the former from the Local Government Transition Act and the latter from the Development Facilitation Act. The IDP process sets out broad development objectives of its area, with the LDOs dealing precisely with issues raised in the process, but the reason for drawing up LDOs is that once they have been approved they have a statutory power.

Responsibility for Preparation

Development plans may be drawn up by the any responsible authority including :

* the Province / Premier on the advice of the Commission;
* a metropolitan authority
* a regional council;
* a metropolitan council;
* a local government body; and
* a community development committee (ibid).

Purpose and Content

As set out in chapter four of the Draft Provincial Planning and Development Act, the general purpose of the Development Plan is to promote *a co-ordinated, harmonious, and sustainable development of the area to which it relates, in such a way as will most effectively promote health, safety, order, amenity, convenience and general welfare as well as efficiency, economy and participation in the planning and development process*. The Act stipulates the minimum requirements for the Development Plan as encompassing the following elements, namely:

* A co-ordinated policy, which sets out development policies and priorities in the sectoral, spatial and institutional fields; intended land use in broad terms, densities, and the provision of roads and infrastructure;

* Planning controls and performance criteria, which deal with day-to-day mechanisms such as town planning schemes; simpler zoning plans; regulations to

control the erection of buildings and their use, use of land, intensity of development and subdivision / sectional title / shareblock / communal ownership;

* A budgetary programme, linked to the previous two elements and is for the implementation of the Development Plan;

* Environmental management components (that is, EIA and IEM); and

* the Name of the authority responsible for the administration, implementation and enforcement thereof (ibid).

In terms of Section 33 of the Act, the Premier is empowered to identify areas or features such as buildings, natural or important cultural features, either generally or specifically as special case areas or features for environmental concern. In identifying such areas, the Premier may limit certain activities to be carried out, prescribe special procedures, binding on the State, which are necessary to ensure that adverse effects on the environment are assessed before the development process takes place, and establish management bodies for such areas. The environmental management components ,therefore, clearly demonstrate that development plans are a major advance on the Package of Plans regarding the extent to which they legally give recognition to the environment.

Having introduced the new planning approaches, it is now opportune to explore the extent to which they integrate the environment into planning and development. This will be done by examining how these new planning approaches could be of use in the context of Durban's Southern Industrial Basin.

THE SOUTHERN INDUSTRIAL BASIN

Introduction

In few places in South Africa are so many of the conundrums of environment and development arrayed and juxtaposed so starkly as in the Southern Industrial Basin, where apartheid planning has so closely intermixed heavy petroleum and chemical industries with communities and neighbourhoods
(Wiley, at al, 1996).

As will be shown in the discussion, the history of the Southern Industrial Basin is the history of the imposition of an industrial zone upon a previously densely settled residential and market gardening area, a history of racial segregation, land expropriation and a history of forced removals (Scott and Ridsdale,1997). This historical development of the area was dominated by an understanding of jobs, access to housing and a shift from self-sufficiency to wage labour. In the process, there was also the emergence of industries, the generation of employment and the gradual movement of workers from outside the area to take up local jobs and undercut wages (Nurick, 1997). Eventually, there was a gradual movement of whites out of the area with apartheid and environmental pollution. Forced removals, the juxtaposition of residences to industrial complexes and resultant conflict, bitterness and mistrust are also some of the most important themes that characterise the history of the Southern Industrial Basin.

In the discussion, it will also be shown that past planning for the Southern Industrial Basin failed to accommodate environmental considerations. The dominant planning and development imperatives in the past in the Basin were industrial development, segregation through racial zoning and separate development and as well as apartheid, engineered by the Durban Post-War Development Committee. The issue

of the environment was considered in those circumstances where and when it would be instrumental in the attainment of the political imperatives.

It is only recently that, with the mounting rise of community environmental activism, planning and development interventions are beginning to take environmental issues seriously in the Basin. This environmental activism is also exerting pressure on industries in the area to improve their environmental performance. Whilst the historical relationships between industries and local communities in the Basin have generally not been positive, there is now a developing level of understanding and collaboration between these groups to work towards achieving sustainable development in the area.

Therefore, in order to understand why the Southern Industrial Basin is what it is today and where it is moving, it is necessary to introduce it in terms of its locational context, historical dynamics and debates around sustainable development. From here, it will be easy to discuss why the new planning and development approaches are important in the area and for the environment in general.

Locational Context

Durban's Southern Industrial Basin is used here to denote the area in which the author has conducted this study. The Basin is thus used in this report as a generic term, incorporating the residential communities of Bluff, Isipingo, Merebank, Wentworth, Umlazi and as well as the adjacent industrial complexes. It is an area which represents a complex mix of many manufacturing and heavy chemical processing industries, including both major South African and international companies. ENGEN is the largest South Africa-owned integrated petroleum group. SAPPREF is the largest crude oil refinery in South Africa owned by Shell South Africa. Meanwhile, AECI is the largest conglomerate which includes fifteen different chemical producing companies in Umbongintwini. The study area also houses Mondi

Paper Company, which has the largest paper mill in the world in this area and is a major subsidiary of Anglo American Corporation Ltd. Finally, Waste Tech is one of the largest Waste Management Companies in Kwazulu-Natal that operates the Isipingo Border and was operating the Umlazi hazardous landfill site before its closure in February this year. However, at present, as a result of the collapse of the Bulbul Drive landfill site, there are talks of re-opening the Umlazi site.

The Durban International Airport is also located at the centre of the Basin. However, plans are at a serious stage to move the Airport to La Merci. This would free up large amounts of land for redevelopment which could potentially include heavy industry and light industry, commercial, residential, recreational or mixed uses. There is also a proposal to develop the site as a second port. South Coast Road and Southern Highway also cut through the study area.

The study area is also marked by " three distinct zones" of residential communities, to use the terminology of Scott and Ridsdale (1997). The *Northern Zone* is located in the planned industrial heart of Durban. Bluff includes settlement areas of Brighton Beach, van Riebieck Park, Cave Rock, Grosvenor, Ocean View and part of Wentworth, and most of these areas are resided by whites. Wentworth is predominantly a coloured community, but with Africans making some encroachments. Merebank and Clairwood are predominantly Indian areas, with the latter being severely degraded by land invasions.

The *Inland Zone* comprises of Umlazi, which developed from the 1960's as a large scale national government funded housing scheme to house Africans removed under the Natives / Urban Areas Act 25 of 1945. The township is very large in relation to other communities and consists of 26 units with approximately 400 000 people living in formal township housing, hostels and informal backyard and infill dwellings (Scott, 1997). Lamontville was built also as a formal African township in 1934 to provide

housing for middle income African communities. This is a relatively small area but with a number of small pockets of informal settlements throughout the area.

The *Southern Zone* stretches down to Umbongintwini. It includes Isipingo, a predominantly Indian residential community which in turn includes the informal settlements of Malukazi and the suburbs of Isipingo Beach, Orient Park and Isipingo Rail; Embhokodweni, a small informal African area close to Umbongintwini Industrial Site and, Athlone Park, which is a formal white area lying adjacent to the Umbongintwini Industrial Complex.

Past Planning and Development Interventions

The Natal Chamber of Industries (NCI), the Durban City Council (DCC) and the Borough Boundaries Commission (BBC)

Before the First World War, the main function of Durban was that of a port and commercial centre with earliest industrial establishments located in and around the centre of the town. The function of the establishments were those of supplying basic needs such as food, shelter and clothing to the white population, and as well as processing of local products (Young,1972). However, as the town grew, so were industrial activities. The discovery of minerals, South African and First World Wars facilitated the development of Durban to take a more industrial character by the 1920's, with industries moving towards the south of the town (Scott,1994). Scott also argues that this southward gravitational movement continued to the 1930's facilitated by local government's reclamation and infrastructural works and land acquisition for industrial development purposes.

The laying out of the plan by Cato in 1839, the proclamation of the Old Borough in the 1850's and the proclamation of 324 acres of Borough Ordinance land for military purposes created a planning and development framework for the southward spread

of industrial activities. Scott argues that the Ordinance, whilst not specifically town planning legislation, provided for the Durban City Council to purchase land in and outside its jurisdiction, expropriate land for public purposes, control land subdivision and prepare town planning schemes. Whilst industrial nodes were also established north and west of Durban, by the turn of the century, many industrial nodes could already be found to the south of Durban. These were Congella, Isipingo, Wentworth, Merebank, Jacobs, the Bluff, Umbongintwini and Clairmont -later renamed as Clairwood in 1911 (Young,1972).

From the early 1920's, the Durban City Council and the Natal Chamber of Industries were the major facilitators of industrial expansion to the Southern Industrial Basin. From its inception, the Natal Chamber of Industries involved itself not only in the general promotion of industrialisation, but also in policies aiming at housing African labour in hostels close to industry, and the location of industrial activities and the acquisition of land for industrial development (NCI,1995). The Natal Chamber of Industries was thus very influential in promoting the Durban City Council to pursue the aggressive policy of industrialising the Southern Industrial Basin.

The NCI was also instrumental in stimulating the Council to provide facilities and land for industrial development in the Basin. This could be seen by the words of Karl Gundelfinger, the President of the NCI:

The only drawback I can think of is the question of land and its price. Land is unquestionably dear and rates have to be paid on this dear land... and I can only suggest that the Municipal Authorities should endeavour to find a way of this situation if they desire Durban to develop industrially (NCI, 1926).

The response by the Council to the pressure by the NCI was the acquisition of large tracts of land for industrial development purposes. For example, 194 acres of land were purchased at Wentworth in 1925, and this piece of land was intended for both

industrial and residential development purposes. The reason for this was that the interdependence of work zones and residential zones provided a conceptual framework early industrial development in the Southern Industrial Basin.

In addition, the NCI also drafted scheme for the reclamation of land at the head of the Bay as aimed at the continuation of the Maydon Wharf industrial zone. This scheme was presented to the Minister of Railway and Harbours in 1936. The canalisation of the Umbilo and Umhlatuzana Rivers, a road across the Bayhead to the Bluff and the relocation of the marshalling yards of the railways to the Bayhead were also proposed in the NCI's development scheme (Scott,1994).

By the 1930's, the Council wanted to obtain territorial and administrative control of the emerging industrial areas to the south of the Borough in order to further implement its industrial policy. To meet this objective, the Council initiated and instituted the Borough Boundaries Commission (1930-1931). The report of the Commission became a very strong policy document envisaging the Basin as the industrial heart (productive zone) of the city, surrounded by racially zoned residential areas to provide labour for the expanding industrial core (ibid).

From Segregation to Apartheid: A Planning Framework for Industrialisation and Racial Zoning

The Council's intervention in the development of the Southern Industrial was closely linked to ideological frameworks. The planned development and concomitant formalisation of the Basin was envisaged as part of a broader goal of creating an efficient industrial city to accommodate both employment generation and investment in Durban in general. However, Scott (1992) argues that " *the primary goal of facilitating industrialisation was vouched within the municipal authority's broader agenda of maintaining white domination and creating a spatially segregated city*".

This statement is justified by the following past planning and development intervention in the Basin:

* *The Borough Boundaries Commission and the "Added Areas"*: In order to translate the concept of interdependence of work and residential zones into a practice, the Commission proposed the incorporation of the so-called *"Added Areas"*. These were those areas to the south, north and west which fell outside the administrative boundaries of the Old Borough. The other motivation for the incorporation was that there was a need for accommodating the insanitary "black belt" so that the Council could control poor health and housing conditions in these areas (Scott,1994). After the incorporation, slum clearance via the application of the Slums Act of 1934 proceeded, and this occurred particularly in those areas that the Council has earmarked for future industrial development (McCarthy, 1988).

In all these development interventions planning was fundamental. Scott argues that it was within the context of the functionalist Town Planning Ordinance of 1934 that the Commission was able to plan for the incorporation of the Added Areas. The Commission's plan provided a framework within a wide range of development actions were proposed and for which additional town planning legislation was mooted to meet industrial development objectives and transform the South Coast Junction into a modern planned industrial area.

Eventually, the promulgation of the Town Planning Ordinance 27 of 1949 also provided a powerful tool by which industrial development could be facilitated in the Basin. The failed attempts to rezone Clairwood as an industrial were largely pursued in terms the 1949 Ordinance (ibid).

* *The Bayhead Development Plan*: This plan was presented to the DCC by Durban Bay Development Committee in 1949 as also another planning and development to further industrialise the Basin. Scott argues that the turning point in the creation of

the Southern Industrial Basin was in 1937 when the Council officially accepted that the head of the Bay was a natural location for industrial activity. The Council also stimulated the Railways Administration to develop the area. The Minister of Railway and Harbours responded by appointing the Durban Harbour Development Committee. Like all other development bodies, this Committee also recommended the development of the Basin by integrating railways, shipping and industries in the area, the creation of Indian and African housing schemes for labour purposes and as well as the undertaking of reclamation, dredging and river canalisation works in the area (Young, 1972).

* *Racial Zoning Plans*: In 1943, the Barnes report on the Post-War Development Committees of the city of Durban was released. During the same year, the Administrator of Natal appointed Douglas Mitchell to chair the Post-War Works and Reconstruction Committee. As these bodies progressed in 1943-1945, the idea of racial zoning as the key to post-war reconstruction and development of cities began to emerge as central to the planning instruments which the Committees attempted to formulate (Mabin and Harrison,1996). The Racial Zoning Plan drawn by the Durban Committee in 1943 formed the basis for Provincial Committee's development recommendations. The plan included an industrial zone from the Bayhead down to Umbongintwini, as well as different residential zones for different race groups (Scott and Ridsdale). Scott and Ridsdale argue that the Zoning Plan also formed the foundation of the Technical Subcommittee's Report on Racial Zoning of Durban for the 1951 Group Areas Act. The report was in turn submitted to the Land Tenure Advisory Board and it provided an extensive and comprehensive exposition of both the principle of racial zoning and the mechanisms for achieving the sectoral model of South African cities.

* *Planning of Housing Schemes*: These were residential development which were particularly for the non-whites to cater for the accommodation needs of the labour

population. As could have been seen in this discussion, these are Lamontville, Wentworth, Merebank, Umlazi and many others.

Broadly speaking, planning and development interventions in the Southern Industrial Basin were underpinned by the economic and political imperatives. These are industrial development and racial separation and apartheid. From an environmental point of view such kind of planning is open to a number of criticisms, which is what the next section is about.

Critique of Past Planning Intervention in the Basin

Informal Settlements

At present, the SEA study for South Durban had found that over 27 000 dwellings of informal settlements exist in the Basin. There is also an increasing incursion of these informal dwellings in those areas surrounding the Airport and in Clairwood. These developments are without access to services such as water, electricity and refuse removal. Whilst, there might be many reasons at present for their emergence, historically informal settlements are a product of apartheid planning, forced removals and separate development.

Sprawl and Fragmentation

As could have been by the discussion, the organising principle informing apartheid planning was spatial segregation according to race. The resultant and adverse impact has been the creation of a spatial form that is racially structured, high fragmented, sprawling and poorly integrated functionally, with the poor groups located at the periphery (Durban SDF,1997). It within this context that the spatial structure of the apartheid city is petrified for centuries to come and the urban poor

are doomed to areas that will forever carry the mark and characteristics of the apartheid city (DCC,1994).

Environmental pollution

The Basin is characterised by a combination of pollution aspects such noise, light, water, air as well as public health impacts. Air pollution is a major concern in the Basin, as there is the area hosts a variety of heavy, polluting industries.

Land Use Juxtaposition

The Basin is a sad case of poorly planned and aggressive industrial development in close proximity to residential areas. The Basin is a case of one of the significant failures of planning and development interventions in accomodating environmental concerns.

Economic Inefficiency

Environmental degradation in the area imposes major costs on the economy and individual businesses. Addressing the effects of pollution is often more costly than preventing them. For example, health problems associated with pollution often result in high medical expenditure.

It is within the above context that environmental activism emerged in the Southern Industrial. This section is explored below.

Historical Context and Environmental Initiatives

It is within the context of land-use juxtaposition and environmentally-related problems such as noise, air, water and terrestrial pollution that environmental initiatives emerged up in the Southern Industrial Basin. The following retrospective look at the history environmental initiatives in Durban's Southern Industrial Basin is fundamental in informing future planning interventions. The historical context provides a wider framework for understanding how the environmental concerns were tackled in the past and the experience gained and the lessons made provide a fertile ground for dealing with current and future problems in the Basin.

Merebank

The Merebank Residents Association (MRA) is one of the earliest organisations in South Africa to be involved in urban environmental issues. As early as from the mid-1960s, the MRA raised concerns about pollution resulting from industrial developments and expansions in the area. However, it was in the early 1990s that the MRA made a significant impact regarding environmental considerations. Major environmental problems that drew the attention of MRA included traffic from trucks going to and from the Mondi paper mill; bad smells from ENGEN's holding ponds; noise pollution from Sacca Merebank's refrigerated trucks; accidents; and, as well as the bromine explosion at CG Smith that caused the Alipore Road School in Merebank to be closed on one occasion (Wiley,at al 1996).

One certain incident that was particularly contentious was when a young Merebank resident was killed in a collision with a Mondi truck in 1991. In response, the MRA organised a peaceful march which was to later lead to the mayor's car being halted on its way to a function at the Mondi paper mill. Nonetheless, the incident proved to be very powerful as it formed the fundamental basis for negotiations over traffic

problems that emerged later in 1993 among the MRA, the Deputy Executive Chairman of Anglo American -Mondi's parent company and the City Council.

The MRA has also been involved in campaigns aimed at allowing communities to have access to information regarding the compliance of industries with set performance indicators. The right of communities to know about pollution affecting them became a continuing theme of MRA's environmental work.

1993 proved to be a watershed year for the MRA. It was in this year that it made proposals for some changes in environmental laws to the City's Environmental Working Group of the Bylaws Forum. Also by the same year, its Environmental Co-ordinator participated in the International Mission on Environmental Policy to make recommendations on environmental policy to the Government of National Unity. The MRA Environmental Co-ordinator also served as an officer nationally and regionally for the Environmental Justice Networking Forum (EJNF), a network of environmental organisations that supported locally-based environmental activism in order to influence national policy (Ibid).

In 1993, with funds from the Holland Anti-Apartheid Committee, the MRA was also able to employ a professional environmental scientist enabling it to expand its environmental agenda. The scientist developed an Industrial Environment Policy which represented a new approach for the Association, focusing on broad industrial and governmental strategic environmental management issues. It was at this moment that the Association lobbied the City Council to conduct a Strategic Environmental Assessment (SEA) for the region and made the controversial demand for a moratorium on further expansion of investment in the region until the SEA study was completed.

Bluff

As early as the 1970s and 1980s, several individual Bluff residents had raised concerns about pollution from oil refineries in the Basin, but their actions were so uncoordinated to made no significant impact. The Bluff Ridge Conservancy is one particular organisation that stood out predominantly in the area in terms of environmental issues. The organisation had a series of discussions with Mobil concerning pollution abatement measures. However, no improvement came out of this as Mobil was considered a key national concern. In 1995, the BRA together with a German engineer living in the area tried to engage with ENGEN in discussions about some engineering changes that might reduce pollution (Sulphur Dioxide) emissions. Even in this case, little if any thing was achieved (ibid).

The BRA was also very active in environmental concerns relating to the conservation of natural vegetation along the coastal dune and the buffers strip in the area. Their involvement in Project Regenerate was a lifetime achievement. The Project was a co-operative effort by National Parks Board, Wildlife Society, Centre for Science and Industrial Research and the Durban Corporation to conserve and protect natural ecosystems on the Bluff and to restore the Treasure Beach and Happy Valley Vlei.

Wentworth

Prior to 1995, Wentworth was a hub of civic organisations fraught with political rivalry and disunity. In 1995, three civic groups from the African National Congress , Azanian People's Organisation and National Party united to form the Wentworth Development Forum. The central theme in the Forum was the environment. The WDF was extremely active in negotiations with: ENGEN; with the Steering Committee of the South Durban Sulphur Dioxide Management System; and Chemico and ENGEN over the need for environmental impact assessment in planning proposals for the development of a new plant at the former Chemico site. Apart from

these, the WDF was very influential in co-ordinating organisations in the Basin which were involved in regional forums on environment and development issues.

Isipingo

During the 1980's, approximately thirty civic and environmental organisations joined their forces to form the Joint Action Committee of Isipingo (JACI). This is an umbrella committee with the environmental concern as a major theme. One focus of environmental concern was on the rehabilitation and protection of the estuary and the mangrove community. In 1985 the Isipingo Centre of the Wildlife Society was established as an organisation to focus specifically on estuarine issues. However, the momentum of this initiative gradually waned and finally disappeared. In 1994, the Isipingo Environmental Committee (IEC) was formed and sought to re-launch the activities of the latter campaign. Originally organised as a committee of the ANC, IEC eventually became an independent body and is active in JACI.

Umlazi

Umlazi Civic Association (UCA) was the major impetus behind the environmental movement in the area. It participated had an environmental representative who participated in several city and province-wide environmental activities. The major concern in the activities of the Association was noxious odours and pollution from the Waste-Tech hazardous landfill site. The site was also a problem as even as outside the boundaries of Umlazi. Isipingo neighbourhoods and the Isipingo Secondary School were also affected as these were located just across the Umlazi border close to the landfill. Unfortunately, the efforts of the Association were not successful as their complaints were for the most part always disregarded by the Waste-tech management (Nurick, 1997).

From the above discussion of the history of environmental initiatives in the Basin, it appears that these made much of their impact during the beginning of the 1990's. Perhaps, three important aspects of global change deserve mentioning here as they might provide convincing *explanations* for the recognition and importance of environmental initiatives in the Basin in the 1990's.

The first is the process of global economic restructuring. The global economy is undergoing a process of profound and fundamental restructuring resulting in the internationalisation of economic development. Paradoxically, this restructuring is also reaffirming the importance of place and suggesting a new and significant role for localities. The deepening integration of South Africa into the global economy has been facilitated by the ending of sanctions, South Africa's membership of the World Trade Organisation (WTO), and a shift in macro-economic policy from Import Substituting Industrialisation (ISI) to Export Oriented Industrialisation (EOI). At the same time, the country is also moving into the Information Age by appropriating new and rapidly evolving information, telecommunication and manufacturing technologies (Harrison, 1996). Within the context of the Basin, this has meant that industries need to adapt and innovate, and by the same note expand their facilities in order to be globally competitive. These, whilst essential for the well-being of community, are also accompanied by by-products which are unfriendly to the environment.

The dilemma for Durbanites - in local government, industry and community- is that industrial expansion that is essential for the metropolitan economy will also increase environmental and related health problems (Wiley, et al 1996). It is perhaps within this context that the environmental initiatives have emerged in the Southern Industrial Basin, because as the *economy improves, diseases associated with industrialisation, environmental pollution and trauma are likely to assume even greater importance* (Albertyn, 1993).

The second important trend is that of the global environmental movement. Whilst the international green movement emerged long time ago in history, it is only the 1990's which has been appreciated as the decade of the environment, as shown by Agenda 21, Local Agenda 21 as well as Strategic Environmental Assessment. The high priority given to the need for the protection and conservation of natural resources internationally might be seen as having been a major impetus behind the resurgence of environmental initiatives in the Southern Industrial Basin. Having been subjected for years to industrial, noise, light, waste and other forms of pollution, the renewed interest in environmental considerations in the 1990's offered the communities of the Basin a voice to be heard and responded to in planning and development initiatives, as has been seen in the discussion by a whole series of negotiations and comprises among the industry, community, and city and local governments.

Referring to the impact of global trends on planning in Kwazulu-Natal, Harrison (1993) cites the global shift towards democracy as an important theme that needs to be looked at seriously. The reality of democracy has led to an urgent need for developments and procedural tools that are sensitive to the needs of communities. The international trend to democracy coincided with a new political landscape in South Africa. The national election in 1994 brought new democratic ethos to the country. New principles that became hallmarks across the country were participation, accountability, transparency and accessibility. These principles reinforced the burgeoning demands of all the South Durban communities to have their issues addressed in open forums with communities having access to information and decision-making. This new political era challenged local governments government to operate in new and uncharted ways, with companies also having to confront a new uncertain business and policy environment which if not properly addressed might overthrow or the threaten the viability of the local economy.

The history, legacy and growth of activism around the environmental considerations, the impact of global economic restructuring, global environmental movement and a

global shift towards democracy on the Southern Industrial Basin have set the stage for addressing environmental concerns within a sustainable development perspective. Durban's Southern Industrial Basin, therefore, offers an excellent example for addressing natural, social and economic development concerns and future direction for sustainable development through the current planning approaches.

Sustainable Development Context

The contribution and better prospects offered by the new planning approaches to the environmental considerations have to be viewed within a sustainable development perspective. In the case of the Southern Industrial Basin, five key strategic issues have been identified as very fundamental to sustainable development. These are the local economy, living environments, air quality, waste management and institutional frameworks (Hatch,1997). These then provide a benchmark and criteria against which to test the viability and feasibility of the new planning approaches.

Local Economy: A number of significant international trends are having a significant impact on the development of industry in the Southern Industrial Basin. The unprecedented level of economic integration, widely referred to as 'globalisation' is increasingly making an important mark in the area. Intra-regional trade is also likely to increase with the strengthening of regional blocs such as European Union and the implementation of regional trade agreements such as the North American Free Trade Agreement. South Africa's accession to General Agreement on Trade and Tariffs means that the country's economy is now opened up to more international competition (Peart, 1997). Internationally, competitive firms have moved from the mass of standardised products to a more flexible regime, widely referred to as 'flexible specialisation'. For local firms to be globally competitive, they may need to move towards flexible specialisation (Robbins, 1997).

These processes of a 'brutal wrenching transition towards a global information-driven economy' are associated with losers and winners in the Basin. Industrial chemicals, plastics and biotechnology sectors; paper and pulp are responding effectively well to the new challenges, with sectors such as clothing, textiles and motor vehicles facing enormous pressures and severe dislocations (Harrison, 1996). Within this context, it is thus argued that any planning intervention should be aimed at contributing to local economic development in the Basin.

Social / Living Environments: The current spatial pattern in the Basin reflects the consequences of racial land use planning, with industrial development acting as a buffer between population groups and incompatible land uses being juxtaposed to one another. Associated with these are noise and physical risk of proximity to development. A more recent phenomenon in the area is the incursion and mushrooming of informal settlements into the industrial areas such as those in the areas surrounding the airport and in Clairwood(Hatch, 1997). Sustainable planning intervention should thus aim at addressing these issues in the Basin, if the major objective is to appropriate the advantages associated with sustainable wave of thinking.

Air Quality: Industrial pollution is a priority concern in the area. Recent research findings from the Air Report for the Centre for Science and Industrial Research (CSIR) reveals that there is little data that is in fact available for the Basin, with the exception of Sulphure Dioxide. However, local guidelines set by the SO_2 Monitoring Committee are well below the South African standards with the effect that the guidelines are often exceeded at monitoring sites located in the Basin. Therefore, the high levels of SO_2 in the Basin raise concerns about the carrying capacity of the area and the effects of future industrial development that have a high potential of further increasing SO_2 levels.

Waste has also been identified as a major problem. The Waste Management Report of the CSIR shows that the Southern Industrial Basin generates over 45 000 tons of domestic waste per annum, while industries in the area produce nearly 50% of the hazardous waste generated in the province. The recent September soil spillage at the Bulbul Drive is an ominous sign that the site in now increasingly unable to accept any further waste. A major concern regarding waste management is that waste producers do not pay the full environmental costs of disposal, given intense competition between waste operators where prices are largely determined by market forces rather than by disposal costs.

Institutional Environment: Balancing economic and social development as well as environmental considerations calls for a strong institutional arrangement, which is at present not the case in the Southern Industrial Basin and the whole of Durban Metropolitan Area alike. Institutional arrangements related to environmental protection are not clearly outlined in the area where responsibilities are split between local, regional and national authorities. Achieving sustainable development therefore requires establishing an effective institutional framework, so that the incentive for firms to transfer environmental costs to the local present and future community is reduced to as minimum a level as possible.

The themes discussed above form a sustainable development criteria against which to assess the new planning approaches in relation to the environment. This theme is carried out in detail in the next section.

THE NEW PLANNING APPROACHES AND THE SOUTHERN INDUSTRIAL BASIN

Strategic Environmental Assessment

Strategic Environmental Assessment for the South Durban industrial area has been initiated by the South Central Local Council and the Durban Metropolitan Council. It forms phase two of local government's commitment to Local Agenda 21, with phase one having been the detailed outline of the State of Environment and Development of the Durban Metropolitan Area. This SEA is aimed at providing a mechanism for addressing natural, social, and economic concerns and providing a strategic direction for future sustainable development. Whilst it has been initiated by the two councils, the South Durban SEA is a project of Metropolitan significance which forms a major component part of Metropolitan Integrated Development Framework (Hatch, pers. com,1997).

In terms of the sustainable development criteria set above, the Strategic Environmental Assessment for the Southern Industrial Basin has already made huge strides. The first two phases of the SEA which comprised an assessment of the baseline social, economic and natural environment of South Durban with the aim of identifying strengths, weaknesses, opportunities and constraints have already been completed. The South Durban SEA Project Team is currently embarking on phase three which will include an assessment of various types of development for the Southern Industrial Basin. From the first phase up to the present stage of the SEA process, some of the advantages of the SEA regarding the extent to which it balances planning, development and environmental considerations could already be singled out.

Regarding air quality, the SEA study shows that the Hawk model currently in use to model Sulphure Dioxide dispersion in the Southern Industrial Basin cannot identify individual polluting industries, hence there is a need for all industries to reduce pollution at source. There is also a need for legislation to look at aggregate levels and should incorporate a monitoring component. Within this context, the SEA has the advantage of being able to focus on the impact of industry in aggregate on air quality, taking into account such pollutants as SO_2 , No_x , heavy metals such as lead, volatile organic compounds and photochemical pollutants. Since it has no legal status at present, the SEA cannot identify individual industries responsible for air pollution nor set air pollution standards ,however, it can provide important information on which standards should be based (ibid). The data generated by the SEA study could thus be very influential in making recommendations to the Department of Environmental Affairs and Tourism as to the aggregate impact of industrial activity and as the basis for modifying individual permitting requirements and future planning for the types of industries that could be allowed in the Southern Industrial Basin.

As discussed previously, production of hazardous waste, road system and transportation of waste as well as the storage facilities of hazardous waste present major problems in the Southern Industrial Basin. Through the SEA, this could be addressed as the tool is able consider the implications of various types of development for waste generation and disposal, and consider options for reduction in waste output through recycling (Hatch, 1997). There is also a possibility to explore opportunities for clean technology to reduce waste production by means of SEA . It could also act as a strategic procedural tool for investigating into sustainable options such as integrated waste management at a metropolitan level.

A Social Perception Survey by Data Research Africa has indicated that there is a high portion of formal housing in the Southern Industrial Basin but the quality of housing is very poor, particularly due to residential areas having been built close to

industrial townships. There is also the incursion of informal settlements into some industrial areas in the Basin. Noise pollution and traffic have also been identified as major problems in the social / living environments in the area. The contribution of the SEA in this regard is that it can provide information on which long-term planning and development guidelines for housing could be made. In planning terms, SEA could be seen as a tool for providing data on key issues and sectors for strategic planning purposes.

From a local economic development perspective, the role of the SEA is also indispensable. The economic study has highlighted the importance of the Southern Industrial Basin to the provincial, national and international economy, but detailed data on employment, revenue, tax and profit generation was not available. Peart (pers.com 1997) argues that this weakness could be resolved as the next phase of the SEA can focus on the collection of information on levels of employment - including types of jobs, financial contribution to the local, provincial and the national economy, and as well as tax generation to assess the impact of industry on economic development.

A port-focused SEA

Perhaps, this might be seen as an interesting and important example of how Strategic Environmental Assessment could be linked to planning and development. Earlier on, it was pointed out that trade is one of the international trends that is playing an important role in the world economy. The total volume of world trade has risen substantially over the past decade. Thus, increasingly, the ability of national economies to grow is being determined by their ability to engage successfully in trade, meaning being able to export competitive products and services. In Kwazulu-Natal, Durban and Richards Bay ports will have an increasing competitive advantage. In Durban,

it could be unashamedly said that much of Durban's existence and growth has to do with the development of 'Africa's Busiest Port', with many of the economic activities dominating the region located in the area due to the development of the port. However, the Southern Industrial Basin is dependent more on the port than other industrial areas to the west and north, with a considerable portion of the total traffic base of the port standing at some 41 to 45 tons annually passing through or influencing economic activities in the Southern Industrial Basin (Peart,1997). From this, it could be said that port development might be very influential in addressing both congestion at existing container terminals and sensitising to the needs of adjacent cities and hinterlands.

The application of Strategic Environmental Assessment to port planning and development would clearly be very important and require ,*inter alia*, these key strategic steps:

* Involving key stakeholders, authorities and port users in identifying a vision and priority issues for the port. These might include Portnet; Spoornet; port users such the automotive manufacturing industry, particularly, Toyota; the forest products industry with main players being Mondi and Sappi-Saiccor; the petroleum industry, with principal refineries such as ENGEN and Sapref as main actors; planners; developers in general as well as environmental scientists with environmental consultative fora also forming an important component part.

* Technical and specialist inputs to evaluate alternatives and potential conflicts and synergies in the port to avoid eventual bottlenecks in the port development process;

* Preparation of a strategic port plan which should identify optimum scenarios for harbour activities and development; and

* Implementation, monitoring, and feedback to re-assess priorities and alternatives for long term port development.

The product of this port-focused SEA would be an established and ongoing process of communication, evaluation, implementation and feedback. The agreed vision and policy framework that was secured at the beginning of the process would act as a guide to ensure that project-specific EIAs within the port are focused, efficient and more sustainable. Out of this SEA for port planning and development, sustainable development needs are looked at more carefully as the participation of stakeholders and other interest groups would make it a point that there is an effective balance between various sustainable development needs.

For environmental considerations to be fully integrated into planning and development, there needs to be a strong institutional environment. In the absence of a strong and effective legal and institutional framework, there is a high probability that achieving the benefits of sustainable development will be lost. The advantage of the SEA regarding this is that it is flexible and can interact with other planning initiatives in the Southern Industrial Basin. It could also be used as a strategic tool to make recommendations on an appropriate institutional management framework that might be favourable for the Southern Industrial Basin. These might be either in the form of regulation, such as legally requiring industries to carry out environmental audits and reduce waste discharges, and requiring new industries to obtain development consents and carry out environmental impact assessments; economic instruments such as increasing the cost of water, implementing a pollution tax or subsidising the adoption of cleaner production; or self-regulation such as Responsible Care Initiative by the chemical industry or the Business Charter for Sustainable Development by the corporate sector (Peart, pers.com,1997).

Weaknesses

Whilst the Strategic Environmental Assessment is a very innovative and strategic tool for environmental management, it nonetheless has two key shortcomings. It has no legal status. This means that it is easy for it to be bypassed as it operates just like environmental impact assessment before the new 1997 mandatory regulations in South Africa. It thus stands the opportunity to be used a procedural ritual with no direct implementation.

The question of who is responsible for commissioning and / or paying for an SEA has not yet been adequately and comprehensively answered. Internationally, strategic level assessments are primarily the responsibility of national and regional governments and are often carried out by appointed consultants. It is likely that a similar pattern will prevail in South Africa, and there is a need for looking into this urgently as the environmental problems are continuing apace and waiting for no bureaucratic delays and inefficiencies.

In conclusion, Strategic Environmental Assessment is rapidly emerging as an important environmental management tool in ensuring the symbiotic relationship sought in planning, development and the environment. From the above discussion, it could be seen that Strategic Environmental Assessment conforms to the sustainable development criteria, and so it could thus be safely argued that it ,indeed, offers better prospects for integrating the environment into planning. The example of the port-focused SEA clearly illustrates how the SEA could be of use in mediating between planning, development and the environment. The flexibility which allows it to adapt to complex planning, policy-making and decision-making overrides the administrative weaknesses that are seen to entangle the future prospects of the tool in South Africa.

Integrated Development Planning

Having introduced the IDP's, it is now thus opportune to consider them in relation to the sustainable development criteria set out above in order to assess their viability and feasibility in the context of the Basin. It thus has to be acknowledged that IDP's are planning and strategic frameworks which are not equipped to deal with spatial level details of the development process. Nonetheless, they are a very significant advance on previous planning approaches.

Air quality, which is a natural environmental problem and waste management, which is for the most part a human-induced problem in the Southern Industrial Basin, have significant health, economic and social implications, implying that these cannot be addressed from purely fragmented sectoral approaches. The key to solving the problems thus lies in a *multi-dimensional and multi-sectoral approach* that would assess the problems in relation to other repercussions that might be incurred in the problem formation. From an integrated development planning perspective, it is possible to address the problems in the Basin, as being "*integrated*" is the key to what is different about this new approach (Webb, pers.com,1997). Integrated means considering not just one sector - for example economy, or one group of issues - for example environment, but instead bringing together all important sectors, issues, resources and concerns into a whole, - *holism*. Therefore, by making the preparation of Integrated Development Plans the primary responsibility of Councillors and Officials with a strategic technical support from professional town and regional planners, environmentalists, engineers, architects, economists and institutional strengthening specialists as well as community groups such as metropolitan forums and development forums in communities, the development and environmental considerations in the Basin could effectively and sustainable be solved.

As discussed in the previous sections, the issues of poor quality housing and other social concerns such as noise pollution and informal settlements threaten the viability of the social environment in the Basin. Through integrated development planning, living environments in the Basin could also be better improved. This might involve promoting economic opportunities such as identifying and reserving appropriate land for servicing and upgrading in the case of informal settlements, townships and run-down estates in the area. In cases where there are apparent health hazards, the land development component of the IDP could be used as a basis for a regulative form of planning -for example through zoning a particular piece of land for open spaces. Therefore, *through IDP's, land use planning and environmental management could be better integrated* (MacIntosh, pers.com 1997).

The other critical element for achieving sustainable development in the Basin is local economic development. This particular concern can be effectively addressed as in terms of the Local Government Transition Act, IDP's must provide for economic development. A major concern is that planning intervention in the Basin should contribute to local economy mostly in terms of employment created (type and numbers of jobs) (Hatch, pers.com1997). South Durban is very fortunate to have plenty of labour or employment-intensive economic activities at a time when national, provincial and local governments are converging and investigating into opportunities of promoting Small, Medium and Micro Enterprises in order to create jobs. Manufacturing and, automobile assembly and component sectors are likely to benefit from the national government cluster support programme. Other SMME-related activities may benefit from a number of organisations such as Ntsika Enterprise Promotion Agency, Khula Enterprise Finance Limited, Khula Credit Guarantee Limited. At a local level, SMMEs could benefit from Thekwini Development Centre and Durban's Manufacturing Advisory Centre (Peart, pers.com 1997). Local economic development strategies of the IDP's in the Basin could be tailored to capitalising on these emerging institutional support services.

The aged infrastructure and buildings on parts of the Basin, with specific reference to Mobeni and Jacobs offer opportunities for urban renewal strategies which could facilitate the upgrading and the improvement of the general aesthetics of the area. Local government in conjunction with private sector forces might have to take an innovative and a strategic role in this regard (Robbins, pers.com,1997). It could be seen then that the multisectoral, holistic, strategic and yet flexible nature of integrated development planning could be of pivotal importance to the sustainable economic development of the Southern Industrial Basin.

To completing the whole circle of the sustainable development process, institutional development is very fundamental. Integrated development planning has a number of institutional development strategies at its disposal which might be helpful in sustainable developing the Southern Industrial Basin. These might include, *inter alia*, promoting co-operative governance; departmental co-ordination; human resource development in local government; promoting a consultative approach; managing local government finances, and so on (Williamson, pers.com,1997). If all these strategies are properly utilised for the purpose of sustainable development, socio-economic development and environmental considerations in the Basin could effectively be balanced. Bearing in mind that IDP's are directly linked into budgets, it could be easy for the local, provincial or national government to refrain from funding those development programmes deemed environmentally unsustainable. Therefore, the financial power of governments in the implementation of IDP's gives them a secure position to demonstrate for the first time their commitment to sustainable development.

Strengths

Emerging from the above discussion, it could be seen that Integrated Development Plans have a number of advantages in terms of better linking environmental considerations into planning and development:

* IDPs could enable local councils in the Southern Industrial Basin and the metropolitan council in Durban to direct their financial and institutional resources towards agreed sustainable environmental policy objectives and programmes as well as legislation and regulations;

* IDPs serve as a basis for the local and metropolitan councils to engage and interact with communities of the Basin, various stakeholders and as well interest and affected groups;

* IDPs enable the councils to strategically and systematically prioritise programmes and resource allocations within a sustainable development framework so that there is a strong focus on implementation;

* Central principles of IDPs such as participation, flexibility, accountability, sustainability, quality of life as well as 'time budgeting' could attract outside investment and build broad public support for development projects.

In conclusion, it could be argued that integrated development planning provides an exciting opportunity for achieving sustainable development in the Southern Industrial Basin in particular and in the Durban Metropolitan Area and Kwazulu-Natal in general. By identifying key priorities, highlighting interdependencies and linkages across different sectors and stakeholders, integrated development planning establishes itself as a planning approach that could truly be relied on in achieving sustainable development. Whilst it might have some eventual weaknesses, it is too early to suggest them as it is a process that is still in its infancy, yet truly innovative and progressive over other previous planning advances in terms of the significance attached to the environment.

Development Planning

Development planning or plans also offer better prospects for integrating the environment into planning. In addition to the package set in terms of the Ordinance, it has an environmental management component and provides for the need of having access to the name of the authority responsible for the development process.

The Southern Industrial Basin is a sad case of unplanned urban development allowing polluting industrial development and apartheid high density residential development to occur side by side. The communities in this region may be more aptly described as surrounded by a sea of polluting industries (Indaba,1995 in Wiley,et al, 1996). In this particular context, development planning cannot reverse the process, but through the control elements, such as zoning and town planning schemes, DPs could ensure that future development conforms to sustainable land use and environmental management principles(MacIntosh, pers.com 1997). There are natural areas which represent important resources for environmental sustainability in the Basin, such as mangrove swamps in Bluff, estuaries and wetlands on the floodplains of Umlazi and Isipingo rivers, which should be integrated to create an open space system for the viability of ecological systems and recreational resources for the Basin residents. Within this context, DP's could be a very powerful tool for protecting against unplanned and environmentally-insensitive development (ibid). In this regard, DP's could be seen to contribute both to economic development in the form eco- tourism and welfare, in terms of the quality of life that could be enjoyed in such clean environments.

Secondly, as DP's have a policy or strategy framework that is multisectoral, including spatial aspects, they have the potential to contribute to economic development. For example, by integrating transport planning into land use planning and management through, for instance mixed use development, development planning provide a

threshold support that is sufficient enough to boost public transport and commercial nodes as well informal sector activities around such important nodes as modal transport interchanges.

The other important strength of DP's is that environmental impact assessment forms an important component and in terms of the provincial legislation, this will be a mandatory requirement. This is a major advance on the Ordinance's package of plans. A lot of development initiatives are projected for the Southern Industrial Basin, so compulsory environmental impact assessments will be a major quantum leap towards integrating the environment into planning and development. Current issues, such as poor waste management and air pollution in the Basin could in future possible be guarded against, as issues such as the amount of waste products, atmospheric and or water emissions to be produced and how these will be disposed will have to be answered before the development process takes off.

Nonetheless, development planning reliance on the Environmental Impact Assessment, despite the fact that it will be compulsory, tends to take out most of the contribution it will make towards the environment, as EIAs are project-specific and do not extend to policies, plans and programmes. For a detailed criticisms of EIAs, refer to chapter three and chapter under the SEA section. But bearing in mind that the legislation it still under proposals, some improvement can be made to provide for the SEA. From the above discussion, it could thus said that Development Plans provide a way forward for sustaianble development.

CHAPTER FIVE

PLANNING AND THE ENVIRONMENT : ASSESSMENT AND RECOMMENDATIONS

Introduction

Kwazulu-Natal has an unprecedented range of planning and environmental challenges as we approach the second millennium. We have had a system of town and regional planning since the 1940's that has provided the a basic framework from which to base decisions about current and future development. When dealing with local issues, planning proved to be quite successful. Today, the global trend towards environmentalism means that planning must address environmental issues serially. The environmental movement, that was once considered an 'outcast' in both international and national planning and development thinking has now finally made an indelible mark in contributing to a paradigmatic shift towards sustainable development. Within planning, the international green movement has restored the notion of a rational public interest that was so fundamental to the way planners legitimised their profession. Since the 1990's is widely referred to as the decade of the environment, this suggests a new focus of legitimacy for planning (Harrison, 1997). It is in this spirit that this chapter assesses and suggests some recommendations towards integrating the environment into planning and development in Kwazulu-Natal.

Conceptual Framework

Within planning and other professions alike, there appears to be an unanimous agreement and understanding of the fact that sustainable development provides a broad and contemporary framework for acknowledging the importance of the need

for socio-economic development and the natural environment. Internationally and in South Africa, there is a shift way from traditional land use planning and development control towards attempts to facilitate sustainable development (SEA Primer,1996). This should be seen as a major advance. However, not all is well as this theoretical shift is not directly linked to practical realities. Emerging from this study is the recognition that in reality the road to sustainable development is still long and uneven as there are signs that sustainability has not yet permeated throughout the entire society of Kwazulu-Natal. Much still remains at the level of rhetoric.

For example, in addressing environmental considerations, there are still approaches that cling to purely ecological principles. Whilst this should not be taken to indicate any underestimation of the significance of such a piece of work, it is a problem the Durban Metropolitan Open Space System is a case in point. Set in the context of the last decade, it was a great achievement and it sensitised many to environmental issues. However, set in the 1990's, it appears to be contextually 'unfit' as objectives such as biological conservation and visual amenity are unlikely to be fully realised in the context of informal settlements such as in Malukazi south of Durban and Inanda north of Durban. Whilst there is a strong case for open spaces in D'MOSS objectives, the Social Perception Survey of Data Research Africa (1997) indicates that people in the Southern Industrial Basin prefer to use vacant land for houses rather than open spaces. Effectively, there is clearly a need for some reasonable trade-offs between what decision-makers feel and think is important and what local communities see as and say is important. The message is clear pure; and raw ecocentrism is not possible and will not be appropriate within the context of Kwazulu-Natal, where there is still a strong need for addressing, what the Provincial Growth and Development Strategy (1996) terms the "*poorhouse*".

Within the corporate sector, there are still some with an extreme uncompromising attitude, although others have become sensitised to the environment.. The issue of air quality is a controversial one in the Southern Industrial Basin, with the recent Air

Report for the Strategic Environmental Assessment study indicating that sulphur dioxide loading in the area appears relatively high and in excess of South African guidelines and there is now fear about the SO_2 carrying capacity of the area. Perhaps, in this regard it is pure technocentrism and optimism that drive this uncaring and unfriendly attitude to sustainability principles. However, growing important trends such as environmental auditing, assessment, and corporate environmental policy; environmentally-conscious accounting procedures; environmental funds; strengthening of environmental regulations and the adoption of environmental screening; environmentally sensitive marketing (for example, the Hyperama), green consumerism; and so on, should be telling signs that corporate environmentally-unfriendly business and development strategies can no longer go unseen and unchallenged.

Emerging from discussion above is that there is a need for *pragmatism* when it comes to addressing environmental considerations. Kwazulu-Natal and South Africa alike are very fortunate in witnessing the rise of environmentalism at a time when the two dominant diametrically opposing absolutes are converging. That is ecocentrism and technocentrism. Addressing the environmental issues calls for ideologically flexibility and a need to change from purist approaches and adopt sustainability as a conceptual framework for planning and development, and realistically implementing its principles. This is because *a purist strategy - relying only on the ecocentrism or technocentrism - can be awfully short of logistical means. The need to consider the plurality of levers and a heterogeneous set of mechanisms is hard to escape in the pursuit of environmental sustainability. We have to guard against two rather disparate and contrary dangers. One is to ignore the part that the ecological mechanisms can play in sustainable development, meanwhile, the other is to be over-impressed by what the techocentric mechanism can do and to place our reliance on it in achieving environmental sustaianability* (adapted from Dreze and Sen,1991 to refer to environmental issues).

It is in the context set above Peters argues that *loving change, tumult and even chaos is a prerequisite for survival let alone success and that the loser views the confusion of change as a problem to be dealt with while accelerated change is the grist of the opportunistic winners mil.* For planning, this should mean that incorporating the environment into it should be seen as another advantage by which planning could further legitimise its profession by casting it as sustainable development planning. Meanwhile, for businesses / companies, the internalisation of the environmental concerns into their decision-making structures, as part of acknowledging change, would mean that these can begin to address the nature and implications of their activities in a way which allows for conflict between the ecological and competitive environments to be resolved smoothly and harmoniously.

'New' Legislation

The significance attached to the environment is growing rapidly in South Africa. This implies that for planning and development, it is no longer possible to develop strategies that ignore environmental imperatives. The amendment to the Environmental Conservation Act 73/ 1989 this September should be seen as a quantum leap by the national government. This 'new' Act provides for mandatory Environmental Impact Assessment in the country. However, as we have discussed, this move has been taken by the time environmental problems have been far ahead and more sophisticated to be addressed only by means of the EIA. The same move applies to the Proposed Planning and Development Act for Kwazulu-Natal. Through development plans, the Act also provides for EIA. While more advanced than the package of plans, the Act falls in the same trap as the one by the amended Environmental Conservation Act 73 / 1989. This is because the EIA have the following weaknesses:

* narrow scope of the environment;
* weak methodological content, particularly equity issues;

* unequal access to the process;
* does not extend to monitoring and review;
* does not widen the scope beyond projects to policies, plans and programmes (Glasson,1994).

However, whilst there is a wider scope for the improvement of the Environmental Conservation Act, it should to be pointed out that environmental legislation in South Africa has evolved in a very fragmented fashion and often as 'add-on' to existing legislation. This has led to complex and incremental or piecemeal legislation at national, regional and local levels, and the undesirability of this is beyond saying. In the first place, developers are faced with a complex maze of legislation and varying authorities that they must satisfy. Secondly, there tends to be overlaps and gaps in the legislation. Ultimately, in cases when legislation is drawn by different authorities, there may be varying and different underlying philosophical frameworks, which also cause confusion in the implementation of the legislation. Therefore, fragmented and uncoordinated legislation is something to avoid as best possibly as we can in achieving sustainable development. In circumstances where there is a dire need for some legislative improvements, this should be done as strategically and innovatively as possible to avoid inconsistencies and inconveniences in the sustainable development process.

The other thematic factor that needs serious attention regarding any new environmental legislation is the *context* in which that new legislation must be considered (Williamson, per.com,1997). In the case of Kwazulu-Natal and the Southern Industrial Basin in particular, there is a dire need to for *fuelling the powerhouse* and *preventing the poorhouse*, to use the terminology of the Provincial Growth and Development Strategy (1996). The Southern Industrial Basin is an example of a powerhouse with both lead sectors such as petrochemicals and plastics; food and beverages, and paper and pulp, and employment-intensive sectors such as clothing; textiles and motor vehicles and parts. It is also the

poorhouse with people having limited and differentiated access to income generating opportunities; poor urban communities and as well as informal settlements. Within this context, environmental legislation and regulations should be designed as part of an investment and economic development regime since onerous environmental regulations could discourage investment and prevent development. Lovering (1995) argues that *the crisis in the cities and the transition fantasies of intellectuals and policy-makers* is *creating discourses rather than jobs*. If the objective of sustainable development planning in Durban is to reverse the situation, there is need for giving serious attention to the context within which to design environmental legislation, so that the best outcome could be development that is in step with and effectively balances both international standards and local conditions.

New Approaches

A review of international literature on Strategic Environmental Assessment indicates that there is little that can readily be adopted in South Africa. Instead, it is important that we develop, test and apply a form of SEA that meets the needs of environmental management in South Africa, addresses the problems of the EIA and bridges the gap between planning and Integrated Environmental Management (SEA Primer,1996). However, the SEA has no legal status at present. For it to be effective in integrating environmental concerns into planning and development, the SEA should form an integral part of the Environmental Conservation Act at a national level. At provincial level, the provincial legislation is still at its proposal stage, so in order to facilitate sustainable development , the SEA should form a legislative component of the provincial legislation. Finally, for the viability of the SEA to be practically realised, the issue of who should be responsible for commissioning it has to be clearly sorted out.

There is also a strong case for linking SEA as an integral part of the *Situational Analysis* of the IDP's or IDP process (Robinson, pers.com,1997). This could serve to

highlight such important environmental aspects as environmental land use classification, environmental and cultural resources, environmental hazards and as well as environmental policy and regulations. Within the integrated development planning process, SEAs could also be linked to an *integrated framework for development*. This is because the development frameworks are broad in scope and are a process-oriented form of planning which indicate a high potential for SEA. The validity of this point has already been tested in South Africa. In Victoria and Alfred Waterfront development in Cape Town, a hierarchy or a *package of plans* was used. This consisted of:

* a Contextual Framework incorporating statements of agreed policies and goals;
* a Development Framework providing more specific guidelines;
* Precinct Plans, in which existing and proposed developments were identified; and
* Site development plans, providing detailed plans for buildings, public spaces and streets (de Tolley, 1990).

This package of plans approach thus indicates a high potential for SEA as it (SEA) could be used as a higher level framework within which Environmental Impact Assessment could be carried out (ibid).

Furthermore, the key to IDP's is that they are holistic, strategic, integrated and multisectoral thus opening themselves up to the participation of all those concerned. By so doing, environmental and, planning and development issues are able to tackled right at strategic levels of decision-making. Being linked to budgets, it means that municipalities have an upper hand at deciding out those IDPs deemed environmentally unsustainable. The IDPs are also flexible enough to allow SEAs to form an integral part of them. It is thus recommended that larger municipalities, such as Durban, which have damaged environments such as those in the Basin should consider SEAs linked to IDP's as powerful for integrating environmental and development concerns.

Finally, Development Plans are very indispensable in the incorporation of environmental considerations into planning and development. The strategy or policy framework of Development Plans enables environmental issues to be addressed at the policy level. It is also important to point out that the Strategic Environmental Assessment is very flexible and so could be readily adapted to form part of policy planning in the development planning process, provided that communities and stakeholders participate in the SEA process (Hatch, pers.com,1997).

The control element of the Development Plans is also very important as it could be used to demarcate environmentally sensitive areas so that these are used for such functions appropriate to their character. Secondly, proposed zoning schemes could be evaluated using the SEA. Finally, the SEA could also be used to create a framework for assessing rezoning applications (ibid). However, development planning reliance on the EIA should be seen in serious light if DP's are to be an important tool for environmental management.

Implementation

Throughout the whole study, it was pointed out time and again that the three approaches are fundamental to sustainable development. Both IDP's and DP's have a budgetary element, with SEA being an exception. It is important that planning is tied to implementation as planning that is not implementable is wasteful of both material and intellectual resources. Harrison (1996) and Mabin, et al (1996) also touch on the same theme that planning that is tied to implementation should not proceed. They point to the fact that the failure of regional planning and metropolitan planning initiatives in the past in Kwazulu-Natal was due to the fact that there was no attention to implementation. This is a serious issue that should be considered, particularly in the SEA as at the moment, it is not clear as to which department or

level of government should commission it. However, by linking the SEA to the action-oriented IDP's and DP's, this could be resolved..

Institutional Framework

For the most part, economic activity is the major cause of environmental degradation in the Basin and the country as a whole. The reason for this is that the economy heavily utilises the natural environment in multiple ways, as a source, sink and place (Peart,1997). In the absence of a strong institutional environment, environmental efficiency and sustainability are likely to fail. Within this context, Peart (1997) argues that establishing an effective institutional framework whether through regulation such as obtaining development consents; economic instruments based on the Polluter Pays Principle or self-regulation such as Responsible Care Initiative might form an important steps towards a holistic understanding of environmental problems in relationship to socio-economic development.

CONCLUSION

The basic theme of this study was to consider the extent to which environmental considerations have been incorporated into planning in the past in Kwazulu-Natal. The author's argument was that the environmental concerns were not fully integrated into planning and development in the past. This is ,in fact, was the case as it has been seen by the Ordinance's package of plans, past regional and metropolitan initiatives, the narrow conceptual framework used and the procedural instruments such as Environmental Impact Assessment and Integrated Environmental Management. Given the shortcomings of these instruments and other previous approaches, it has demonstrably been argued that Strategic Environmental Assessment, Integrated Development Planning and Development Planning offer a wider scope for the incorporation of the environmental considerations into planning and development. However, it should be noted that the success of these approaches

will de dependent upon how they are implemented and received by the community on the ground. Nonetheless, these current instruments provide are innovative and strategic enough to make sustainable development a reality in Kwazulu-Natal.

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APPENDIX

Interviews

Dr G P Hatch (South Durban Strategic Environmental Assessment Project Manager, CSIR)

Mr N van Heerden (Planner at the Department of Landscape Planning and Design, Durban City Council)

Prof M Kahn (Department of Town and Regional Planning, University of Natal, Durban)

Mr I MacIntosh (Planner in the Development Control Section, Durban City Council)

Mrs R Peart (Environmental Planner and Researcher at CSIR, Durban)

Prof P Robinsin (Department of Town and Regional Planning, University of Natal, Durban)

Mr N Webb (Planner at the Department of Landscape Planning and Design, Durban City Council)

Miss A Williamson (Senior Planner at Siyakhana Planners, Architects and Urban Development Specialists, Durban)

Personal Discussion

Prof G G Garland (Department of Geographical and Environmental Sciences, University of Natal, Durban)

Mr A Hindson (Lecturer at M L Sultan Technikon, Durban)

Miss Z Patel (Researcher at CSIR, Durban)

Mr G Robbins (Urban Strategy Department, Durban Metropolitan Council)

Dr. D Scott (Department of Geographical and Environmental Sciences, University of Natal, Durban)

PLANNING AND ENVIRONMENTAL CONSIDERATIONS IN KWAZULU-NATAL : THE CASE OF DURBAN'S SOUTHERN INDUSTRIAL BASIN

THE UNIVERSITY OF NATAL: DEPARTMENT OF TOWN AND REGIONAL PLANNING

QUESTIONNAIRE

The aim of this questionnaire is to conduct research on planning and environmental considerations in Kwazulu-Natal, with particular reference to the Southern Industrial Basin.

Every piece of information will be treated with extreme confidentiality.

NB. PLEASE INDICATE WHICH SECTIONS YOU WOULD BE ABLE TO RESPOND TO.

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1 **Personal Data**

1.1 Name of the Respondent _____.
1.2 Address and phone number_____
_____
1.3 Name of Employer_____
1.4 Your Position _____
1.5 Number of Years Living in KZN_____

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2. Historical Background on Planning and the Environment in Kwazulu-Natal

2.1 Environmental Conservation Act 73, 1989

2.1.1 The aim of the Act was *to provide for the effective protection and controlled utilisation of the environment, and for matters incidental thereto.*

i) Did the Act live up to its purpose?
ii) What improvement did it make?
iii) What were some of the shortcomings of the Act?

2.1.1 The Act has undergone various amendments, with the Gazette of 5 September 1997 being the latest Amendment, and the objective of which is to achieve responsible environmental management through mandatory regulations.

i) Is this final product going to make any significant changes and improvements towards the integration of environmental concerns into planning and development.

ii) What are some of the advantages associated with the promulgation of environmental impact regulations?

2.2 Land Use Control Legislation : The Natal Town Planning Ordinance No. 47 of 1949

2.2.1 Was the **Structure Plan** as useful planning tool for mediating between planning, development and the environment?

2.2.2 What were some of the weaknesses of the Structure Plan?

2.2.3 How effective was the **Town Planning Scheme** as a mechanism to protect and control environmental resources?

2.2.4 To what extent did the **Need and Desirability** Applications / **Township Establishment** procedures consider the importance of the environment?

2.3 **Regional Planning**

2.3.1 Ecological views informed traditional regional planning. Was this form of planning achieved in practice?

2.3.2 Were the notions catchment plans and homogeneous regions that informed traditional regional planning adequate enough to facilitate environmentally sustainable planning and development?

2.3.3 How effective is the current practice of regional planning in integrating the environment?

2.3.4 How could future regional planning broaden the scope for the integration of the environmental concerns?

2.4 **Metropolitan Planning**

2.4.1 How did past metropolitan initiatives incorporate the environment into planning?

2.4.2 How effective was this?

2.4.3 How effective is current metropolitan planning in relation to the environment?

2.4.5. What are the future prospects?

2.5 **Past Planning Policy and the Environment**

2.5.1 From your experience, how important were the environmental concerns in past planning policies in Kwazulu-Natal?

2.5.2 How were the environmental concerns incorporated into planning policies?

2.5.3 How effective?

2.5.4 What were the problems?

2.5.5 **Drakensberg Policy Approaches**

a) Was the policy effective in adequately providing for the protection of the intrinsic resources in the Drakensberg?

b) What were the problems?

c) How could the policy have been improved to fully respond to environmental considerations?

2.5.6 **"Green Wedges" Policy**

a) The intention of the policy was *not to prohibit development in green wedges but to control the nature of development pressure* (Jones,1991). How effective was the policy in reaching for this compromise?

b) Was the policy proactive enough to accommodate economic development (tourism) within a sustainable environmental framework?

2.5.7 **Metropolitan Open Space System** (MOSS)

a) Were the objectives of this policy achieved, particularly, the trail system; visual amenity and biological conservation?

b) Was this an effective and environmentally sustainable policy?

c) To what extent did the policy consider cultural and socio-economic diversity of metropolitan areas?

2.5.8 **Wetland Policy**

a) How succesful has the provincial policy been achieving wetland management objectives?

b) What were the problems?

2.5.9 **Other Policies and Initiatives**

a) What are they?

b) How did they incorporate environmental concerns?

c) How succesful and effective?

3 **PROCEDURES**

3.1 **Environmental Impact Assessment** (EIA)

3.1.1 How has the EIA been applied in Kwazulu-Natal? i.e history and case examples.

3.1.2 How effective was it in addressing the environmental considerations?

3.1.3 What were some of its weaknesses?

3.1.4 What are some of the general criticisms of the EIA?

3.2 **Integrated Environmental Management** (IEM)

3.2.1 How has been it applied in Kwazulu-Natal?

3.2.3 What were some of its differences from and strengths over the EIA?

3.2.3 How could IEM be applied more effectively?

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4. **The Current Context for Planning and the Environment**

4.1 **Current Planning**

4.1.1 How would you describe planning today?

4.1.2 How different from the past and how effective?

4.1.3 To what extent is the environment being incorporated? How and How effective will it be?

4.2 **Strategic Environmental Assessment** (SEA)

4.1.1 Do you have any knowledge of SEA? If so is it an appropriate and innovative instrument for the integration of environmental concerns in planning and development?

4.1.2 What are SEA's advantages over the EIA and IEM?

4.1.3 Does Kwazulu-Natal have sufficient professional expertise and competence to conduct SEA's?

4.1.4 Whilst the SEA is new and very innovative, perhaps it has some weaknesses as well. Are there any suggestions to this?

4.2 **Integrated Development Plans** (IDP's)

4.2.1 What IDP's have you been involved in?

4.2.2 From your experience, to what extent do the IDP's offer better prospects for the integration of planning and the environment as compared to past planning?

4.2.3 How do they incorporate the environmental considerations?

4.2.4 Are there any suggestions as to how IDP's could be improved?

4.3 **Development Plans** (DP's)

4.3.1 To what extent do Development Plans incorporate environmental issues?

4.3.2 What mechanisms do DP's have in relation to the environment?

4.3.3 What are the strenghts of these mechanisms over the Ordinance's Package of Plans in relation to the environment?

4.3.4 What are the advantages of Development Plans over land development procedures such as Need and Desirability Applications and Township establishment?

4.2.5 Are there any suggestions as to how DP's could be improved to cater for the environment?

5. **The Current Planning Instruments and The Southern Industrial Basin**

There are five key strategic issues which have been identified as important for sustainable development in the Southern Industrial Basin. These are:

1. Air Quality ;

2. Economic Development ;

3. Waste Management ;

4. Social Development (i.e Living Environments) ;

5. Institutional Frameworks.

NB. **QUESTION** : **HOW COULD THE NEW PLANNING INSTRUMENTS EFFECTIVELY ADDRESS THESE ISSUES FOR THE SUSTAINABLE DEVELOPMENT OF THE SOUTHERN INDUSTRIAL BASIN ?**

A: ***STRATEGIC ENVIRONMENTAL ASSESSMENT***

B : ***INTEGRATED DEVELOPMENT PLANS***

C : ***DEVELOPMENT PLANS***

Thank You Very Much for Your Support and Participation!