

# INTEGRATED DEVELOPMENT AND THE BROWNFIELDS PHENOMENA

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## ABSTRACT

South African local government managers presently face a formidable range of challenges. Over and above the management of the local government institutional transformation processes and associated issues, an equally important management challenge looms, namely the brownfields phenomena. The problem of brownfields impacts widely within South African municipal boundaries. Brownfields are defined as follows: "Abandoned, idled, or under-used industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contamination".

A question that confronts local communities in the 21st century is how to provide needed economic opportunities while, at the same time, avoiding the environmental degradation and social inequity that often accompany past models of development. This question is relevant in all spheres of government but particularly imminent for local government. Relations between communities and nature are, and have always been, complex. The socio-physical impact that unsustainable development within municipalities have on community health and nature, are signals that fundamental problems exist. Brownfields are to be found within most highly urbanised and industrialised South African municipalities. By their very nature brownfields are therefore inseparable from issues of social and economic development

In terms of legislation, South African local governments must submit integrated development plans that set out the authorities' envisaged development strategies for the future. In the event where the above strategies do not reflect a coherent plan for achieving sustainable development which is set to address the needs of the present communities without compromising the ability of future communities to meet their own needs, local government will not be successfully transformed.

What is called for is an integrated environmental management approach amidst the integrated developmental planning and implementation process. In this paper four conditions for the redevelopment of brownfields are identified: community involvement and partnerships, sustainable community development, economic opportunity for business and a strategic vision for urban redevelopment. Arguments are put forward as to why the said four conditions are important to attain sustainable brownfield redevelopment, why the processes of integrated environmental management should be applied in conjunction with integrated development planning and why local government managers have a key responsibility in this regard.

The notion of Developmental Local Government led to a totally new approach to what was traditionally viewed as the essential role and function of local government. Historically, local government was seen as a vehicle to ensure the delivery of basic services (e.g. water and sanitation) to the community in an orderly fashion (Cloete, 1983:6) and to implement regulations (Integrated Development Planning, 2000: 4). However, in the new dispensation, the Reconstruction and Development Programme identifies local government as a primary facilitator to redress the lacking infrastructure and limited economic activity associated with most of the segregated residential areas within South Africa (Reconstruction and Development Programme, 1994: 129). In other words, local government should take responsibility for reconstruction and development activities.

According to De Beer and Lourens (1995: 7), local government should function within the policy framework and subsequently the objectives, set by provincial and/or national government. According to Mokate (1999: 191) the policies and strategies followed by local authorities to attain developmental goals are additional, yet complementary to, national developmental goals. In fact, the new function of local government is articulated in the *Constitution of the Republic of South Africa*, 1996 (Act 108 Of 1996). Publications such as the *White Paper on Local Government* (1998) projects a vision of developmental local government to reverse the apartheid patterns of development (Integrated Development Planning, 200:1). Further functions of local government relating to development issues since the advent of the new constitutional dispensation, are clarified by *inter alia* the *Local Government Transition Act*, 1993 (Act 209 of 1993), the *Municipal Structures Act*, 1998 (Act 117 of 1998), and the *Municipal Systems Act*, (Act no 32, 2000). Generally, the current powers and functions of the transitional metropolitan councils range from basic amenities to be delivered, to infrastructure development and economic development (Cloete, 1997:33). The significant change in government policy from a basic service delivery and regulatory approach to a reconstruction and development approach, resulted in a new set of management challenges for local government officials.

Part of the strategy towards attaining development objectives is the requirement that all South African municipalities should introduce a business-like approach towards development by setting in place integrated development plans. This implies that local government should henceforth follow a strategic approach to the planning and implementation of development projects (Integrated Development Planning, 2000: 4). The end result should be the social and economic upliftment of communities and the associated access to affordable essential services. However, development strategies put in place without due cognisance of the effect thereof on the environment as a whole, is deemed as unacceptable practise. Presently, what is called for is a sustainable development approach, which is focussed on developmental activities within the context

of environmental wellbeing at the municipal level. In the event where local development strategies do not reflect a coherent plan for achieving sustainable development which is set to address the needs of the present communities without compromising the ability of future communities to meet their own needs, it is questionable whether local government will be successfully transformed.

The question therefore, that confronts South African local communities in the 21st century is how to provide needed economic opportunities while, at the same time, avoiding the environmental degradation and social inequity that often accompany past models of development. Relations between communities and nature are, and have always been, complex (Hugo, Viljoen & Meeuwis, 1997: 6). The socio-physical impact that unsustainable development within municipalities have on community health and the natural environment, are signals that fundamental problems exist. Associated with this is the spiraling urban decay that is prevalent in most of our metropolitan areas. Areas affected in this way are called brownfields and are to be found within most highly urbanised and industrialised South African municipalities. Local government officials are presently called upon to manage the redevelopment of these phenomena.

By their very nature the problems associated with brownfields are inseparable from issues of social and economic development. Essentially, the nature of the relationship between local communities and their environment should be addressed. In order to establish this *transactional relationship* (Hugo *et al.*, 1997: 6) between people and the environment, four conditions are suggested with regards to the redevelopment of brownfields: **community involvement and partnership, sustainable community development, economic opportunities for business and a strategic vision for urban redevelopment.**

This paper proposes that a decided fusion takes place between integrated environmental management and integrated development planning and that brownfields should be redeveloped within this context. Arguments are put forward as to why the said four conditions are imperative to attaining sustainable re-development and why local government managers have a key responsibility in this regard.

## DEFINING AND EXPLAINING RELEVANT CONCEPTS

In addressing the issue of integrated development in local government, clarity is sought with regards to the meaning and implication of the array of relevant terminology. For the purposes of this paper, the following will be presented: *Firstly*, the concepts *environmentally sustainable, development, sustainable development and developmental local government* are described. *Secondly*, a definition for *integrated development planning* will be offered. In the *third* instance, the *brownfields* phenomena will be elucidated upon. Finally, in the *fourth* instance *integrated environmental management* will be defined.

The concept *environmentally sustainable*, in a municipal service delivery context, refers to a service rendered in a manner that (a) ensures minimal harm to the environment and to human health and safety; (b) the potential benefits thereof to the environment and to human health and safety is optimised; and (c) that all legislation intended to protect the environment and human health and safety is adhered to (*Municipal Systems, Act no 32, 2000: Development* in a municipal context refers to “integrated, social, economic, environmental, spatial, infrastructural, institutional, organisational and human resources upliftment of a community aimed at improving the quality of life of its members with specific reference to the poor and other disadvantaged sections of the community” (*Municipal Systems, Act no 32, 2000: 8*). Furthermore, *sustainable development* should be viewed as a concept dealing with change in which the utilisation of resources are coherent with future as well as present needs (World Commission on Environment and Development, 1987:9 in Hugo, Viljoen & Meeuwis, 1997: 176). *The South African White Paper on Environmental Management* (1998) in turn defines sustainable development as “development which seeks to integrate environmental, social and economic concerns, now and in the future, and to keep within the carrying capacity of the environment”. Hugo *et al.* (1997: 176) lists the objectives of sustainable development as the following:

- Maintaining essential ecological processes and preserving bio-diversity.
- Sustaining the use of species and ecosystems, some of which contribute to supporting industries.
- Developing opportunities for the spiritual, recreational and aesthetic use of natural resources.
- Maintaining and improving quality of life.
- Developing a long-term sustainable economy.

In short, the objective should be to ensure that development takes place in such a way that it does not compromise environmental sustainability, health and safety and that natural and cultural resources are not put in jeopardy. Against this backdrop, the *White Paper on Local Government* (1998: 17) defines *developmental local government* as “local government committed to working with citizens and groups within the community to find sustainable ways to meet their social, economic, and material needs and improve their quality of life”. The implication of this is that municipalities should co-operate with community stakeholders to further democracy and participation in issues of concern so as to ensure that needs are addressed and effectively met (Ceasar & Theron, 1999: 61). The objectives of developmental local government could therefore only be achieved if environmental sustainability and sustainable community development are ensured simultaneously.

According to Ceasar & Theron (1999: 60) *integrated development planning* (IDP) involves a process through which local government observes issues and sectors in relation to each other and encompass all efforts to address the needs of its residents, especially the poor. It implies a process of holistic planning, taking account of and integrating, all aspects of local government - including economic issues, social issues, spatial issues and/or institutional issues. Ceasar & Theron (1999: 61) therefore state that "IDP is a structured plan to be followed in future, with a common agreement on action to be taken on the integration of different sectors in order to achieve set goals". *Integrated development planning* implies that a process is embarked upon which should be managed by local government officials in a holistic manner, according to the principles of sustainable development.

The concept of *brownfields* is not widely used in South Africa. According to Moate (2000), this term is not employed by the South African government policies dealing with issues of an environmental nature. The term though, is not uncommon among the Town and Regional Planning fraternity (Van Huyssteen, 2000). However, United States of America sources on brownfields depict it as being "abandoned, idled, or under-used industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contamination" (Center for Energy and Environmental Policy, 1999: 3). According to the Center for Energy and Environmental Policy (1999: 3) the realisation of sustainable urban development hinges on the resolution of the problem of *brownfields*. Often, these neglected stretches of abandoned land serve as home to the poor and destitute. It often poses ecological and human health threats to these groupings. *Brownfields* are the consequence of diverse interrelated problems, including urban sprawl, environmental degradation, residential segregation, disinvestment and persistent socio-economic and racial divisions. The criteria of what constitutes a brownfield are according to Alker, Joy, Roberts & Smith (2000: 63) the following:

- It may be located in either a rural or urban setting.
- It comprises an area that was previously developed.
- It currently is not utilised for its intended use and may be abandoned.
- It comprises land and/or buildings.
- It may be occupied or vacant.
- It may be certified or perceived as a contaminated area.

Generally, brownfields are regarded as urban or rural areas where previous economic activities have subsided and which are at present not well utilised due to the possibility that it is either polluted and/or that the continuous utilisation thereof is not perceived to be economically viable. Brownfields that are located within municipal areas may pose a health threat to a community and often impact on impoverished communities that may not be in a position to effectively deal with the threat themselves. When the phenomena of brownfields are considered, it becomes clear that the principles of sustainable development were not applied in the initial development that had resulted in the creation of the brownfields.

*Integrated environmental management* (IEM) is a concept formulated during the 1980's and constitutes a holistic approach to the planning and implementation of development programmes (Van Rooyen, 1999: 240). It is designed to ensure that the environmental impact of development projects are understood and considered during the planning process (Department of Environmental Affairs, 1992: 5). In the *White Paper on Environmental Management Policy* (1999: vi), integrated environmental management is simply defined as all activities that are managed to balance development with environmental sustainability. *The White Paper on Integrated Pollution and Waste Management for South Africa* (2000: 57) defines the concept as "a philosophy that prescribes a code of practice for ensuring that environmental considerations are fully integrated into all stages of the development process in order to achieve a desirable balance between conservation and development". Since integrated environmental management involves a process of planning and implementation of development projects in such a way to ensure the sustainability thereof for all concerned stakeholders, similarities are also detected between the processes of, and issues associated with, integrated development planning and integrated environmental management.

## **ECOCENTRIC MANAGEMENT : A NEW PARADIGM IN LOCAL GOVERNMENT MANAGEMENT**

**T**raditional management theory reflects a dualism and anthropocentric approach to nature Bucholz (1993: 341). Until relatively recently, few attempts have been made to make environment a central part of management theory. Environmental issues are traditionally regarded as being integrally part of the natural sciences. Management theory did not traditionally deal with nature and made no mention of managing nature as a commons in the interests of society resulting in managers and employees not considering the environment in executing their functions.

Responses to societal problems range from economic fundamentalism to corporate social responsibility. Economic fundamentalism refers to the belief that market forces can sufficiently address all societal problems worth solving. The forces of supply and demand dominate thinking about the economy and development and are primary formulas to allocating resources. People are in a sense dehumanised and become factors

of production just as land, labour and capital is seen to be the major inputs in the process (Bucholz, 1993: 344). However, in an industrialised capitalist country such as Japan, the realisation is occurring that there is more to life than economic growth and gross domestic product. In the 1970's and 1980's the Japanese economic boom resulted in an economic fundamentalist approach to addressing a variety of human problems. A materialistic outlook on life, in which environmental concerns had no place, took effect. Pollution related diseases started taking its toll on Japanese society and this resulted in economic problems such as a loss of productivity. The so-called global environmental problem (GEP) threatened socio-economic well-being and environmental policies gained prominence. Presently, the economic debate increasingly centres on meaning and values in life. In other words the "quality of life" principle. This tendency is rooted in the concern that the drive towards "economic globalisation" is aggravating global stress such as the increasing poverty of the world's disadvantaged and large-scale environmental destruction.

In pursuance of globalisation, developing countries have one real advantage over developed countries as far as sustainable development and environmental management are concerned, namely that they may benefit from others' experience. Hiraki (1998) concludes that developed countries can transfer their experiences and technologies in dealing with development and environmental problems to developing countries. This will result in a decrease in the marginal costs of development and environmental conservation and preservation in those developing countries. On the other hand, developing countries should guard against isomorphically imitating industrialised countries' development models. Hiraki (1998) coins the term "preventative principle" and explains that developing countries should grasp the opportunity presented by "late" development, but should prevent imitating their mentors' models to the extent that they also become late environmental conservationists and preservationists.

At present the focal objective is sustainable development that incorporates conventional economics, humanitarian economics and ecological economics (Van Zyl, 1998). Van Zyl (1998) terms the emerging economic vision "new economics" and mentions that it seeks to subordinate fundamental economics to human values such as value for natural resources (ecological sustainability), value for people (social sustainability) and value for human relations that lead to democratic participation.

The notion of corporate social responsibility has in recent years been regarded as a way for organisations to address problems of a social nature. The premise of social responsibility is *inter alia* that:

- organisations have responsibilities that go beyond production and service delivery;
- these responsibilities include solving important social problems, especially those they have helped to create; and

- organisations serve a greater range of human values than can be captured by singularly focusing on economic values (Bucholz, 1993: 345).

Various scholars have conducted research on the notion of corporate responsibility and for the purposes of this paper, three major theoretical approaches are elucidated on to explain the relationship between organisations and society: **firstly** the stakeholder theory, **secondly** the normative theory and **thirdly** the social contract theory.

Stakeholder theory implies that organisations need to take into account the needs and interests, and the influence of those who are affected by their policies and activities. The stakeholders could include individuals or groups such as consumers, employees or communities. The problem with the stakeholder theory, according to Bucholz (1993: 346), is that it often discounts environmental considerations from its philosophy and tends to be largely anthropocentric in its approach.

Normative theory deals with the ethics and values in management practice. Managers are held responsible for applying ethical principles in their activities and using moral reasoning in decision-making (Bucholz, 1993: 346). Economic responsibilities are seen as being only part of a more comprehensive value framework in the system. This theory seems to move closer to the ideal of including the natural environment in its considerations, although it falls short of actually including these considerations in its fundamental thinking.

The social contract theory emphasises the changing relationship or contract between organisations and society. This approach is based on the view that the pursuit of economic growth above all other considerations delivers detrimental side effects for society as a whole. Economic growth does not only lead to development but also carries a social cost in terms of a deteriorating natural environment, discriminatory practices and a general erosion of social values and ethical conduct. The contract therefore, serves to re-establish a mutually agreeable relationship between organisations and society (Bucholz, 1993: 346). The problem it seems, is that unless society becomes aware of environmental problems and demands the re-alignment of organisations' conduct with nature, the social contract theory will yield little benefit for environmental preservation.

A lack of consideration for the natural environment in any significant way prevailed. Yet, increasing poverty, population growth, wars, political instability, diseases and so forth, in developing countries result in ruthless exploitation of natural environmental resources. New management theories needed to be developed to fill the shortcomings of the existing ones.

In response to the above, management theorists have made conscious efforts to include the natural environment into their thinking. These theories centre on ecocentric management as opposed to the anthropocentric theories of management. Bucholz



(1993: 350) mentions that the ecocentric management approach is an attempt to focus on ecosystem principles and to emulate the recycling processes of nature. The ecocentric management approach therefore aims to attain sustainable development and environmental preservation as its objective. As an example, table 3.1 compares the traditional management approach to the ecocentric management approach.

**TABLE 3.1: TRADITIONAL MANAGEMENT VERSUS ECOCENTRIC MANAGEMENT**

<b>Traditional Management</b>	<b>Ecocentric Management</b>
<b>Goals:</b> <ul style="list-style-type: none"> <li>- Economic growth and profits</li> <li>- Shareholder wealth</li> </ul>	<ul style="list-style-type: none"> <li>- Sustainability and quality of life</li> <li>- Stakeholder welfare</li> </ul>
<b>Values:</b> <ul style="list-style-type: none"> <li>- Anthropocentric</li> <li>- Rationality and packaged knowledge</li> <li>- Patriarchal values</li> </ul>	<ul style="list-style-type: none"> <li>- Biocentric or Ecocentric</li> <li>- Intuition and understanding</li> <li>- Postpatriarchal feminist values</li> </ul>
<b>Products:</b> <ul style="list-style-type: none"> <li>- Designed for function, style and price</li> <li>- Wasteful packaging</li> </ul>	<ul style="list-style-type: none"> <li>- Designed for the environment</li> <li>- Environment friendly</li> </ul>
<b>Production system:</b> <ul style="list-style-type: none"> <li>- Energy and Resource intensive</li> <li>- Technical efficiency</li> </ul>	<ul style="list-style-type: none"> <li>- Low energy and resource use</li> <li>- Environmental efficiency</li> </ul>
<b>Organisation:</b> <ul style="list-style-type: none"> <li>- Hierarchical structure</li> <li>- Top-down decision-making</li> <li>- Centralised authority</li> <li>- High-income differentials</li> </ul>	<ul style="list-style-type: none"> <li>- Nonhierarchical structure</li> <li>- Participative decision-making</li> <li>- Decentralised authority</li> <li>- Low-income differentials</li> </ul>
<b>Environment:</b> <ul style="list-style-type: none"> <li>- Domination over nature</li> <li>- Environment managed as a resource</li> <li>- Pollution and waste are externalities</li> </ul>	<ul style="list-style-type: none"> <li>- Harmony over nature</li> <li>- Resources regarded as strictly finite</li> <li>- Pollution and waste elimination management</li> </ul>
<b>Business functions:</b> <ul style="list-style-type: none"> <li>- Marketing aims at increasing consumption</li> <li>- Finance aims at short-term profit maximisation</li> <li>- Accounting focuses on conventional costs</li> <li>- Human resource management aims at increasing labour productivity</li> </ul>	<ul style="list-style-type: none"> <li>- Marketing for consumer education</li> <li>- Finance aims at long-term sustainable growth</li> <li>- Accounting focuses on environmental costs</li> <li>- Human resource management aims to make work meaningful and safe</li> </ul>

Source: Bucholz (1993: 350)

According to the *White Paper on Integrated Pollution and Waste Management for South Africa* (2000: 21), the ideal of attaining sustainable development and environmental preservation will be achieved by employing a new management approach which combines pollution and waste prevention and minimisation at the source. In addition, impact management practises and if necessary, remediation should also be incorporated into the said new management approach (*White Paper on Integrated Pollution and Waste Management for South Africa*, 2000: 21). The new management approach suggested in the *White Paper on Integrated Pollution and Waste Management for South Africa* (2000) therefore seems to be aligned to the ecocentric management approach.

## THE FUSION BETWEEN INTEGRATED DEVELOPMENT PLANNING AND INTEGRATED ENVIRONMENTAL MANAGEMENT

**T**he *White Paper on Integrated Pollution and Waste Management for South Africa* (2000: 21) states the South African Government's commitment to implementing policies to prevent pollution, rather than merely controlling and reacting to existing environmental pollution practises. Calls are made for an integrated management approach to pollution prevention that should promote sustainable development and enhance environmental preservation. Reason being that the South African government's policies envisage a reduction of the risks to human health and environmental wellbeing by eliminating the causes of pollution rather than by treating the symptoms thereof (*White Paper on Integrated Pollution and Waste Management for South Africa*, 2000: 21). If the definitions and explanations offered in section 2 (Supra) are compared to the approach taken by the *White Paper on Integrated Pollution and Waste Management for South Africa* (2000), concerning the need for an integrated management approach to deal with pollution and waste management, further investigation into its inter-compatibility, may be warranted.

Generally, management theory prescribes that a process of strategy planning normally precedes the implementation thereof. According to the Integrated Development Planning manual of the Development Bank of Southern Africa (2000: 5), integrated development planning and strategic planning is essentially the same thing. It is a management tool which "enables a municipality to take a broad, strategic view of its development requirements and to address all the key issues in a holistic, integrated development plan" (Integrated Development Planning, 2000: 5).

- **Integrated development planning in local government**

Traditional local government planning practices are being replaced by modern planning techniques to enable local government officials to respond effectively to changes in the municipal environment. New planning models are evolving throughout the world to capacitate local government officials to optimise their resources in executing their functions (Kemp, 1992: 5). One such planning model is integrated development planning in South African local government.

Integrated development planning is mandatory on local government in terms of the *Municipal Systems Act*, (Act no 30 of 2000). The *Municipal Systems Act*, (Act no 30 of 2000) states in section 25 that each municipal council should adopt a “single, inclusive strategic plan for the development of the municipality” which should adhere to the following criteria:

- It should link, integrate and co-ordinate plans and proposals for the development of the municipality.
- Resources and capacity of the municipality should be aligned for the implementation of the plan.
- It should form the policy framework and general basis on which annual budgets are based.
- The plan should be compatible with national and provincial development planning requirements that are binding on the municipality in terms for legislation.

The planning process, which results in a structured integrated development plan, indicates a local council's medium and long-term development strategy. The plan is a collective vision of the development that is envisaged for the municipality. It provides guidelines for resource utilisation to ensure sustainable development. Figure 4.1 indicates the Integrated Development Planning process as a strategic management process. In terms of the process, the following comments are relevant:

- The vision is an ambitious, credible, inspiring and achievable statement about the particular municipality's future.
- The integrated development planning process requires a comprehensive external as well as internal environmental audit. The result is a so-called “*status quo* analysis”.
- The integrated development planning process requires a thorough SWOT analysis, which is referred to as the situational analysis.
- From the situational analysis an integrated development framework (development objectives) consisting of a set of development strategies is derived.
- The integrated development planning process defines operational strategies to achieve the set development strategies. Short and medium term implementation steps give effect to these plans.
- All implementation plans should be linked to the particular municipality's budget, which requires that each implementation step be linked to a responsible person, a target date and a budget.

- The integrated development planning process requires an annual evaluation of the plan to account for changing circumstances, needs and realities.
- The legitimisation of the integrated development plan requires extensive, representative and transparent community participation throughout the planning and implementation process.

- **Integrated environmental management**

In terms of the *National Environmental Management Act*, 1998 (Act 107 of 1998) all organs of state whose activities impact on the environment, should comply with and ensure the implementation of Integrated Environmental Management procedures. This includes the local sphere of government, i.e. municipalities as well. Integrated environmental management is in essence both a philosophy and a formalised approach that determines that all actions taken during project planning and implementation ensures that no consequences are overlooked or underestimated. It is essentially a holistic approach and method guiding the decision-making process with regards to developmental projects. Hugo, Viljoen & Meeuwis (1997: 200) comment that integrated environmental management implies a multi disciplinary analysis and an interdisciplinary synthesis that encourages a project manager to strive towards the efficient utilisation of resources on a sustainable basis.

As far as integrated environmental policies, plans and management are concerned, Agenda 21, the document adopted at the United Nations Conference of Environment and Development held in Rio de Janeiro, Brazil in June 1992 and to which the South African Government is obligated and committed (*National Environmental Management Act*, 1998 (Act 107 of 1998) section 26), stipulates that the following issues are important (*SADC Policy and Strategy for Environment and Sustainable Development*, 1996: 14):

- Economic, social and environmental issues should be integrated in government decision making; and
- the economic, social and environmental costs and benefits of projects and development decision-makers should be made accountable for the environmental impact of their decisions.

The integrated environmental management model consists of three stages in terms of which a project could be planned and implemented. **Stage 1** centres on the development of proposals for projects to be implemented. By incorporating the steps set out in the model when developing the proposal, it will result in better planning and effective and efficient decision-making will be enhanced. The policy, legal and administrative requirements related to the envisaged project, determine the planning framework around which the proposal may be developed. Central to the planning stage for a project is the

identification of the relevant authorities and interested and potentially affected parties. Consultation with these groups should assist to identify the alternatives and the issues that should be considered during the planning stage. The result may be mitigatory options and a management plan for the implementation of the project. Subsequently, a decision should be taken to either do an environmental impact assessment, an initial assessment or no formal assessment to establish the potential impact that the proposed project might have. An impact assessment is usually done when it is evident that the proposed project will have a significant environmental impact. An initial assessment is done when some measure of uncertainty exists as to the potential impact of the proposed project on the environment. No formal assessment is done when it is evident that the proposed project meets all planning requirements and that it will have no environmental impact.

During **stage 2** the authorities as well as the public or affected parties and stakeholders have the opportunity to review the proposal. It is possible to refer the project proposal to the previous stage for reassessing the potential impact. If the proposal is approved, some conditions may be set in accordance to planning, policy, legal, and administrative requirements. It may also lead to the preparation of a management plan as part of the setting of conditions for the approval of the project proposal. The management plan may describe how the proposal will be implemented and stipulate the controls over the implementation as to how the environmental restoration after the project implementation should be carried out. It is also advised that the decision-making authority allows for recourse to appeal. Besides appealing to the decision-making authority, appellants should be allowed to launch a legal appeal if malpractice is suspected.

**Stage 3** deals with the implementation of the project plan. The management plan set out in the conditions of approval during the previous stage should now be activated. A monitoring programme should be required for the approved project, irrespective of the existence of a management plan. The programme should include clear guidelines on what should be done, who should carry the responsibility for doing it and the financial aspects associated with the monitoring process. Furthermore, audits should periodically be done to provide feedback on the adequacy of the integrated environmental management process. The audit is thus a reassessment of the project or policy proposal in the light of the developments during the implementation stage.

One of the priorities of integrated environmental management is to establish a framework of co-operation between the public sector, the private sector and the public so that sustainable development can take place. A well-planned integrated environmental management system should therefore adhere to the following aims (Hugo, Viljoen & Meeuwis, 1997: 201):

- It should encompass the principles of sustainable development to ensure the efficient utilisation of resources by present and future generations.
- It should stimulate responsible and justifiable decision-making and action. Integrated environmental management should therefore serve to stimulate creative thinking in the planning and initial design stage; provide a systematic approach to the evaluation of proposals; formalise the approval process in the decision-making stage; and ensure that monitoring and desirable modifications take place in the implementation phase.
- It should comply with all the requirements of legislation.
- It should implement and encourage the collection of objective information and reliable data as regards environment related aspects.

According to the Department of Environment Affairs (1992) the principles set out in table 4.1 should *inter alia* form the basis of any effective and efficient integrated environmental management plan.

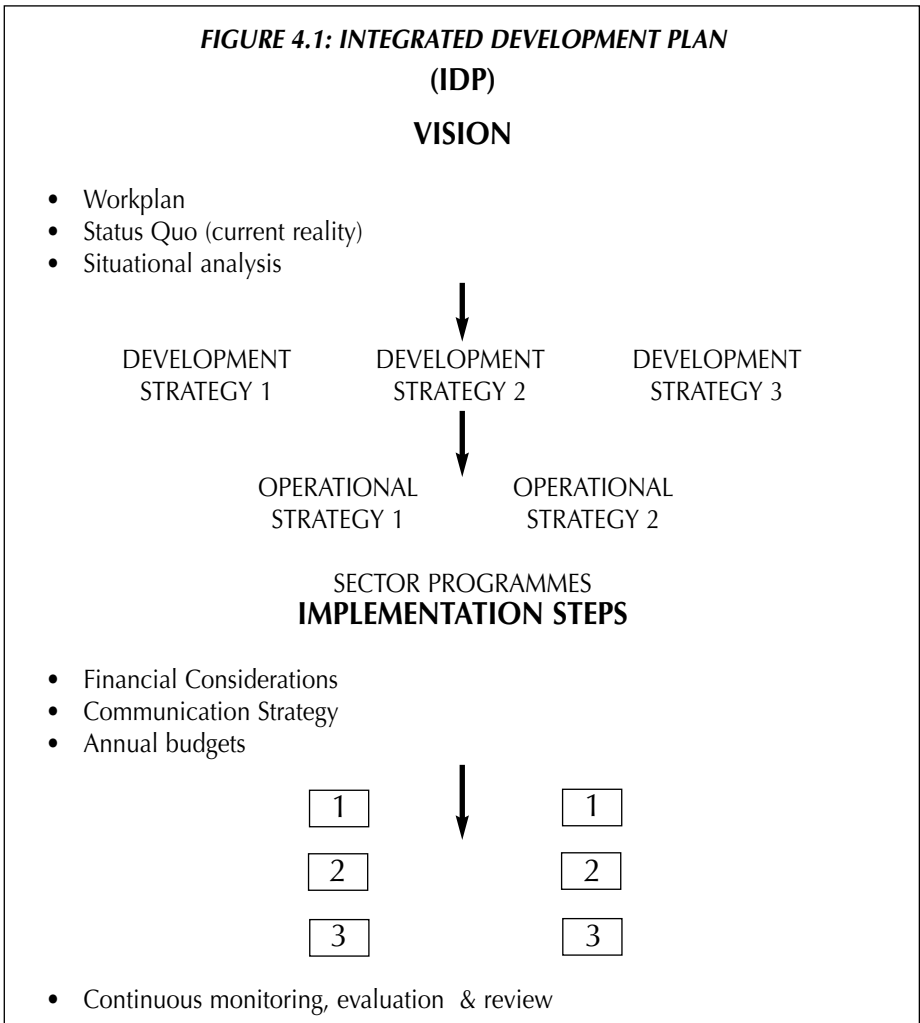
**TABLE 4.1: THE PRINCIPLES OF INTEGRATED ENVIRONMENTAL MANAGEMENT**

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| <ul style="list-style-type: none"> <li>• Informed decision-making</li> <li>• Accountability for information on which decisions are based</li> <li>• Accountability for decisions made</li> <li>• An open, participatory approach in the planning of proposals</li> <li>• Thorough consultation with interested and affected parties</li> <li>• Due consideration for alternative proposals or options</li> <li>• Attempts to mitigate negative impacts and enhance positive aspects of proposals</li> <li>• Democratic regard for individual rights and obligations</li> <li>• The opportunity for public and specialist input in the decision-making process</li> <li>• An attempt to ensure that the social costs of development is outweighed by the social benefit thereof</li> <li>• Compliance with these principles during all stages of the planning, implementation and decommissioning of proposals</li> </ul> |
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The integrated environmental management model is designed to ensure that the environmental consequences of project proposals are understood and adequately considered during the planning process. The term environment should throughout the process be used in its broadest sense to encompass biophysical as well as socio-

economic components. The ultimate purpose, therefore, of the integrated environmental management process is to resolve or mitigate any negative impacts on the environment and to enhance positive aspects of development.

From the above, it could be deduced that the principles of integrated environmental management should be followed in municipalities during their integrated development planning and that brownfields are implied in the reference to remedies (*Infra* section 3) to existing environmental pollution. This means that integrated environmental management could in practise be fused with integrated development planning as the implementation thereof could easily be done according to the integrated environmental model.



## THE BROWNFIELDS PHENOMENA: SOUTH AFRICA AND ABROAD

The South African population is currently estimated at approximately 40.6 million (1996 Census) with an annual population growth rate estimated at about 2%. Presently, 50% of the population live in towns and cities and an estimated 60% of those urban dwellers reside in formal dwellings. Migration from rural areas to urban areas is a universal phenomenon in developing countries (Craythorne, 1997: 393). Cities afford employment opportunities and amenities (State of the Environment South Africa, 1999: 22) yet, not all migrants are successful in finding a better life resulting in entrapment in an urban poverty cycle (Craythorne, 1999: 393).

The increased industrial activities associated with development generate substances that are harmful to humans as well as ecosystems. An example is the 42 million cubic metres of solid waste produced every year in South Africa. In addition, 5 million cubic metres of hazardous waste are generated annually. A further concern is the fact that only 5% of the hazardous waste are disposed of properly. By implication, there is an extensive illegal dumping practise of hazardous waste occurring nationally (State of the Environment in South Africa, 1999: 21). This is exacerbated by the poor location and/or inadequate management of waste disposal sites, a lack of suitable hazardous waste disposal sites and poor urban planning (*White Paper on Integrated Pollution and Waste Management for South Africa*, 2000: 18).

Following are a number of brownfields case studies from South Africa to illustrate the above mentioned waste disposal practises: **Firstly** two South African case studies are cited. The one case deals with industrial environmental pollution and the other case deals with the redevelopment of an extensively polluted and impoverished slum area. Both cases could be deemed as brownfields and should be remedied according to the *White Paper on Integrated Pollution and Waste Management for South Africa* (2000) (*Supra* par. 3 & 4). **Secondly**, a case of successful redevelopment of a brownfield in the United States of America is cited.

- **Industrial pollution in Vanderbijlpark**

An impoverished Vanderbijlpark community of smallholders have applied to the Johannesburg High Court for an interdict forcing Iscor to eradicate a case of extensive soil pollution in the area. The soil in the area of Steel Valley, Syferpan, Rietkuil, Louisrus and Linkolm was allegedly contaminated by Iscor over a period of approximately 25 years. The main sources of pollution in the area include a "slag dump" which comprises a 110ha area of metal and other wastes. Some of the dumped materials are potentially hazardous to the environment and human health. Community members claim that some of the effects of the pollution includes poisoned ground water, dying vegetation, diminished agricultural production and a resulting drop in property values. In the mean time, ISCOR has initiated a number of actions to mitigate the situation, including buying some of the polluted properties from the owners and supplying clean water to some residents in the area (*Mail & Guardian*, May 22, 2000).



- **Brownfields redevelopment in Alexandra**

In the Johannesburg township of Alexandra, a redevelopment project is presently being planned. The Eastern Metropolitan Local Council together with a private sector developer is involved in a riverside development project to establish a number of commercial retail and residential facilities on the banks of the Jukskei river. Included in the envisaged project is a plan to rehabilitate the river, the building of a number of dams and the creation of a wetland area. The objective is to rid the Alexandra community of the slum conditions in which thousands of people are living as well as to revitalise the extensively polluted river area. Presently the polluted river is a health hazard since a number of people are living on its banks. In addition to the health aspect posed by the use of the contaminated water, the people living on the riverbanks are at risk whenever it floods. This project is being undertaken with due consultation and participation between the local community stakeholders, the local authority, provincial and national government and business (**Sunday Times**, November 28, 1999).

- **The development of a hydroponic tomato farm**

Through a collaborative effort involving business, the United States Environmental Protection Agency and local government a formerly contaminated steel plant in Buffalo, New York State was successfully redeveloped. The redevelopment takes the form of a hydroponic tomato farm and greenhouse facility. The project currently yields 65 tons of tomato's per day and provides jobs to 175 people. At first, inhibiting regulations were removed by the authorities, which opened the way for a private sector company to apply for the redevelopment and establishment of the farm. An environmental audit revealed that the soil was extensively oil-soaked and a \$800,000 cleanup process was launched. The production of the tomato crop is powered by a natural gas process, which is clean, odourless and all water and heat used in the process is recycled for reuse. Bumblebees are used to pollinate the seedlings, and other beneficial insects are used in place of harmful pesticides. The redevelopment of this once abandoned industrial area into a lucrative and an environmentally sustainable farming activity, has received international recognition as a successful brownfields redevelopment project (United States Environmental Protection Agency, 1998).

## **RECOMMENDATIONS AND CONCLUSIONS: A SUGGESTED APPROACH IN BROWNFIELDS REDEVELOPMENT**

**F**rom the cases cited above (*Supra* section 5), and the preceding discussions, a number of important conditions that may apply for successful brownfields redevelopment could be discerned:

**Firstly**, in all cases a high level of community partnership and involvement are detected. Current government policies and legislation emphasise need for community involvement and partnership. Involving communities serves to legitimise any planning and implementation strategy. To involve communities in processes of planning may be imperative to ensuring a successful brownfield redevelopment project since it creates an avenue for all the stakeholders to articulate their needs and aspirations, as well as conditions associated with the proposed projects. Sometimes, communities are the one's taking a stance against business to address certain environmental concerns (section 5.1 *Supra*) and sometimes, the communities are the beneficiaries of strategic interventions to deal with brownfields (section 5.2 & 5.3 *Supra*).

**Secondly**, local government is viewed as a vehicle to facilitate sustainable community development. Policies and legislation pertaining to local government that was cited in this paper suggested the necessity to ensure that all community development is sustainable. As far as redeveloping brownfields are concerned, the associated objective of sustainable community development is paramount. Cases in point are sections 5.2 and 5.3 (*Supra*).

**Thirdly**, economic opportunity should exist to attract partnership agreements between business and the rest of the stakeholders in the redevelopment of brownfield areas. Brownfield redevelopment is made easier if investment in such projects are potentially profitable, thus involving business. What is actually called for is the structuring of some kind of public-private-partnership (PPP) agreement. In sections 5.2 and 5.3 (*Supra*), some form of agreement between the authorities, the communities and business was reached to successfully address the brownfields phenomena.

**Fourthly**, a strategic vision for urban redevelopment should exist. This means that local governments should follow a holistic approach to planning and implementing programmes designed to address brownfields. Local government officials should direct municipalities' resources towards attaining the strategic goals set during the integrated development planning process. Since government policies dictate development in municipalities on an environmentally accountable manner, the principles of integrated environmental management should be applied during the integrated development planning and implementation phase.

To emphasise the above four conditions, the *White Paper on Integrated Pollution and Waste Management for South Africa* (2000: 22) is cited as it suggests that successful management of pollution and waste, requires an integrated management approach which will result in *inter alia* the following:

- Strong partnerships between government, the private sector, labour, non-governmental organisations and communities.

- Compliance with environmental legislation.
- Capacity and awareness among stakeholders to promote environmental wellbeing.

Many of the past strategic planning and implementation practises in South African local government were fragmented and ineffective. Municipal officials aligned their strategies to their respective functional areas with due consideration for policies and legislation but with limited or no consideration for the environment or even societal needs. In the mean time, the advent of the new Constitutional dispensation and the emergence of a new management paradigm which dictated that management activities should be environmentally accountable the result was a shift in focus towards sustainable development. The new management approach places a holistic focus on planning and implementation activities associated with development projects. This approach ensures an integration of all the variables that may impact on the process. Local government officials should note that integrated environmental management is required in executing their integrated development plans. An essential part of the integrated environmental management process entails the re-development of brownfields to effect the objective of sustainable local social and economic development. To attain this objective, it is believed that local government managers should consider the four conditions for successful brownfields redevelopment.

## BIBLIOGRAPHY

- Alker, S., Joy, V., Roberts, P. & Smith, N. 2000. *The definition of brownfield*. Journal of Environmental Planning and Management. 43(1).
- Bucholz, R. A. 1998. *Principles of environmental management: The greening of business*. Second Edition. Upper Saddle River, New Jersey: Prentice Hall.
- Cesar, N. & Theron, F. 1999. *Assessing attitudes and perceptions on integrated development planning - The case of Stellenbosch*. Administratio Publica, 9(2).
- Cloete, J. J. N. 1976. *Inleiding tot die Publieke Administrasie*. Pretoria: Van Schaik.
- Cloete, J. J. N. 1983. *Munisipale regering en administrasie in Suid Afrika*. Pretoria: Van Schaik.
- Craythorne, D. L. 1997. *Municipal Administration: A handbook*. Fourth Edition. Kenwyn, Cape Town: Juta.
- Daily Mail & Guardian. 22 May 2000. *Iscor 'poisoned our water'*.
- De Beer, J. & Lourens, L. 1995. *Local government: The road to democracy*. Midrand: Educum.
- Department of Environmental Affairs. 1992. *Integrated environmental management procedure*. Guideline documents 1-6.
- Department of Environmental Affairs and Tourism. 1999. *State of the environment: South Africa 1999-an overview*.
- Development Bank of Southern Africa. March 2000. *Integrated development planning: A strategic management approach for councillors and senior officials*.

- Hiraki, T. July 1998. Personal Interview. Sapporo, Japan.
- Hugo, M.L., Viljoen, A. T. & Meeuwis, J. M. 1997. *The ecology of natural resource management: The quest for sustainable living*. A text for South African students. Pretoria: Kagiso Publishers.
- Kemp, R. L. *Strategic planning in local government: A casebook*. Chicago, Illinois: Planners Press.
- Moate, M. September 2000. Personal interview. Pretoria.
- Mokate, R. 1999. *Local economic development and the national anti-poverty strategy: Meeting the basic needs of people*. Journal of Public Administration, 34(3).
- RDP. 1994. *Reconstruction and Development Programme: A policy framework*. Johannesburg: Umanyano Publishers.
- South Africa (Republic). 1996. *Constitution of the Republic of South Africa*, no. 108 of 1996. Pretoria: Government Printer.
- South Africa (Republic). 1998. *Local Government: Municipal Structures Act*, no. 117 of 1998. Pretoria: Government Printer.
- South Africa (Republic). 1993. *Local Government Transition Act*, no. 209 of 1993. Pretoria: Government Printer.
- South Africa (Republic). 2000. *Municipal Systems Act*, no 32, of 2000. Pretoria: Government Printer.
- South Africa (Republic). 1998. *National Environmental Management Act*, no. 107 of 1998. Pretoria: Government Printer.
- South Africa (Republic). May 1998. *White Paper on Environmental Management Policy for South Africa*. Notice 749 of 1998. Pretoria: Government Printer.
- South Africa (Republic). April 1999. *White Paper on Environmental Policy*. Pretoria.
- South Africa (Republic). March 1998. *White Paper on Local Government*. Pretoria.
- South Africa (Republic). May 2000. *White Paper on Integrated Pollution and Waste Management for South Africa*. Pretoria.
- Southern African Development Community. 1996. *SADC policy and strategy for environment and sustainable development: Toward equity-led growth and sustainable development in Southern Africa*. Maseru, Lesotho: SADC Environment and Land Management Sector Co-ordination Unit.
- Sunday Times*. 28 November 1999. *Enormous waterfront planned for Alex*.
- University of Delaware. May 1999. Center for Energy and Environmental Policy. *The brownfields challenge: A survey of environmental justice and community participation initiatives among ten National Brownfield Pilot Projects*.
- Van Huyssteen, A. October 2000. Personal interview. Pretoria.
- Van Rooyen, E. J. 1999. *Development and environmental management in SADC: The Maputo Development Corridor*. Journal of Public Administration, 34(3).
- Van Zyl, J. October 1998. Personal interview. Pretoria.
- [www.epa.gov/swerosps/bf/html-doc/ssbuffl.htm](http://www.epa.gov/swerosps/bf/html-doc/ssbuffl.htm). United States Environmental Protection Agency. *Brownfields success stories: Buffalo, New York: From polluted steel graveyard to thriving tomato farm*.