AN IMPROVED SOCIAL IMPACT EVALUATION FRAMEWORK FOR THE COMPLETION OF SIA SECTIONS DURING THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS FOR RESIDENTIAL DEVELOPMENTS IN SOUTH AFRICA

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An improved social impact evaluation framework for the completion of SIA sections during the environmental impact assessment process for residential developments in South Africa

by

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Declaration

I, Hilda Bezuidenhout, hereby declare that

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is my own work, that all the sources used have been quoted to the best of my knowledge, and that the dissertation has not been previously submitted at any other university.

Hilda Bezuidenhout Date

Abstract

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Measuring the social impacts of new developments is currently not receiving enough attention and is not required in terms of South African legislation, unlike conducting Environmental Impact Assessments (EIAs), before a new development can commence. A lack of expertise and obstacles in terms of reasonable time frames and financial resources is acknowledged and therefore this dissertation does not propose that Social Impact Assessments (SIAs) should become compulsory under the law, as is the case with EIAs. It is proposed, though, that a larger part than is currently the case be allocated, as part of the EIA process, to measuring social impacts. A framework is introduced that can assist Environmental Assessment Practitioners (EAPs) with completing SIA sections of EIAs, in order to make those sections more comprehensive than is currently the case, but still easy enough to use by practitioners without a social science background. The framework is developed specifically for residential developments in the planning phase, for two reasons: (i) there is a large number of various types of residential developments coming into being in South Africa currently, and (ii) social impacts will be measured more accurately if a framework is used that is developed for a specific type of development, activity or industry. It is advised that this framework be approved by the different provincial authorities and thus incorporated in the current EIA process, as well as ultimately be expanded to be of use in other types of developments as well.

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1. Introduction

Since the publication of the so-called Brundtland Report by the World Commission on Environment and Development (WCED, 1987) and the Earth Summit (United Nations Conference on Environment and Development), in Rio de Janeiro in 1992, the concept of sustainable development has gained wide acceptance (Slootweg *et al.*, 2003).

The WCED (1987:43) defined sustainable development as "… development that meets the needs of the present without compromising the ability of future generations to meet their own needs". Böhringer and Löschel (2006), supported by Elliot (2006), point out that sustainable development is not only about the environment, but also about the economy and society. One of the main objectives of bringing about positive impacts should be that those positive impacts must be sustainable and not only of short duration and temporary in nature.

According to Gibson (2006) sustainability as a recent idea arose in response to the widening gap between the rich and the poor on the one hand, and the continued degradation of the environment on the other, thereby supporting the idea that environmental issues and social issues go hand in hand. Slootweg *et al.* (2003) agree that many now recognize the idea that environment and development are strongly interrelated. The authors express the opinion that, since Environmental Impact Assessment (EIA) is the most developed instrument and often backed by a legal framework in countries, it is increasingly used also to assess the social and economic impacts of planned developments. It is evident that "…(t)here is a growing concern about the environment and social consequences of development efforts. The developed world potentially faces enormous costs due to the need to restore and protect the environment in order to safeguard natural resources for future generations. Developing countries must consider how their social and economic development can be combined with protection of the environment and preservation of their natural resources. This should be regarded, not as a luxury, but as a necessity for sustainable development" (Slootweg *et al.*, 2003:56). Vanclay

(2004) writes that Social Impact Assessment (SIA) is a component of EIA, especially when 'the environment' is understood broadly.

Although much legislative emphasis is placed worldwide in terms of legislation on requiring EIAs for new developments, conducting SIAs can in some instances be equally important. As pointed out by Becker (2001) SIA is a moral obligation, through assessing consequences and taking responsibility for those consequences.

Taylor *et al.* (2004) describe some of the persistent problems and challenges faced in SIA. They write that social analysis is often segmented within the EIA process and EIA practitioners often conduct different parts of the analysis without consultation with scientists in other areas, especially the social sciences. The result is that reports are often fragmented and lack proper integration of the different subject matters. They also identify the problem of political or institutional analysis (that assesses the feasibility of actions) being accepted in the guise of social analysis and used as a substitute for social impact assessment.

Two more serious concerns for the SIA process are identified by Taylor *et al.* (2004:13): "…can (social assessment) be done sufficiently fast to meet the requirements of decision makers, and can the results be presented in a way that officials can use?" According to them broad approaches have often resulted in unduly long time lines and unmanageable results, and the focus is often on a number of standard (usually economic and population-related) variables. With regards to presentation and usability of results they write that most practitioners do not research and present issues that center around the major environmental and social concerns that are applicable to a certain planned action.

Differences in opinion on what the process of SIA entails is another frustration that is experienced in the field. Taylor *et al.* (2004) further point out that the process is often viewed as a research process by academics, or as part of a government agency's decision or planning framework. They come to the conclusion that it is neither: it is not the same as the academic research process and does not fall neatly within the various governmental or community conceptions either.

A final problem listed is decision criteria that are used to make judgements about whether environmental and social effects are positive or negative: criteria used by decision makers are often not specified explicitly and are often inconsistent, resulting in individual agendas being promoted to the detriment of the environment or affected parties (Taylor *et al*., 2004).

Slootweg *et al.* (2003:56) are of the opinion that the worlds of EIA, SIA and economic cost-benefit analysis have until now largely operated in their separate realms. They state that "…the obvious consequence of the desire to integrate environmental, social and economic aspects of project assessment is the apparent need for an integrating framework".

A global overview of SIA will be provided. Then the current role and status of SIA in terms of South African legislation and EIA practice will be investigated and problems in SIA conducted as part of EIA, identified. Based on this, the research problem and objectives of the study will be defined.

2. Social Impact Assessment – Overview

Various definitions are found in literature to describe what 'environmental impact assessments' (EIAs) and 'social impact assessments' (SIAs) are. These definitions, and a further exploration of both processes, demonstrate that there is a close link between environmental impacts and social impacts. Certain principles should be adhered to when conducting both – for the purposes of this study, principles for conducting SIAs are specifically looked at.

In order to demonstrate the large variety of approaches to SIA that exist, methodologies for SIA are briefly discussed, as well as shortcomings in procedures and methodologies that can be expected in general when conducting SIAs.

2.1 EIA and SIA defined

'Environmental Assessment' is defined by Hyman and Stiftel (1988:5) as "… prediction of future changes in environmental quality and the valuation of these changes". According to Becker (1997:2) an 'impact assessment' is "… the process of identifying the future consequences of a current or proposed action". An EIA would thus refer to the prediction of future environmental changes and the valuation of these changes due to a specific action that is planned or that has already taken place.

The Interorganizational Committee on Guidelines and Principles (ICGP, 1994:2; 2003:231) defines 'social impacts' as "… the consequences to human populations of any public or private actions that alter the ways in which people live, work, play, relate to one another, organise to meet their needs and generally cope as members of society. The term also includes cultural

impacts involving changes to the norms, values, and beliefs that guide and rationalise their cognition of themselves and their society".

On this basis, Becker (1997:2) defines SIA as "… the process of identifying the future consequences of a current or proposed action which are related to individuals, organizations and social macro-systems". He also distinguishes between three types of SIAs: micro, meso and macro. Micro-SIAs focus on individuals and their behaviour, meso-SIAs focus on organizations and social networks (including communities), and macro-SIAs focus on national and international social systems.

Burdge (2003a) listed the following myths often surrounding SIA.

- Social impacts cannot be measured; therefore they should be ignored.
- Social impacts are common sense and everyone knows what they are.
- Social impacts seldom occur and therefore need not be assessed.
- Social impacts deal with costs, not benefits and SIA slows down or stops projects.
- SIAs and/or EIAs increase the price of projects and do not improve benefits.
- The SIA process is not important.

2.2 Relationship between EIA and SIA

There are opposing views about the relationship between EIA and SIA.

One view is that conducting SIAs and EIAs often goes hand in hand. These are two different processes that focus on two different environments (social environment and natural/physical environment) at a particular location and run parallel. The ICGP (1994) goes as far as saying that SIAs are the social science component of EIAs. Since EIAs are required in most countries before a development can commence (thus in the planning phase) it is best to commence with a Social Impact Assessment as well in the planning phase of a project so that alternatives to the project can be identified and considered, based on the anticipated impacts (thus influencing the planning process). Derman and Whiteford (1985:1) states: "SIA represents an effort to increase knowledge before, during and after development projects and to incorporate the target population into the planning and active stages of the project". During the other phases of the project (construction/implementation, operation/maintenance and decommissioning/closure) social impacts should continue to be measured, since the anticipated impacts might be different than the actual ones, and new impacts that were not anticipated might emerge.

Another view is that SIA has not been widely accepted as part of EIA. Burdge (2002) give the following reasons why SIA do not constitute a component of EIA.

- There is minimal consensus about the definition and the label for SIA.
- There is little agreement on the relationship between SIA and EIA. Are they related and should the two processes be done collectively or separately?
- When is SIA required? If it is not required and does not contribute to the assessment of projects and policies, then why do it?
- Is there a body of research findings the might direct the practitioner in doing a SIA of a proposed action? If a body of research findings exist, is there a conceptual framework to guide the research and advance the accumulation of findings about social impacts?
- What should be included when doing SIA?
- Do we have examples where a SIA has actually made a difference or been followed in the project appraisal/decision process?

Burdge and Vanclay (1996) write that, despite many advances having been made in the field of SIA and its incorporation into the EIA process, there are not many examples where it has actually made a difference in the project decision process. “SIA is recognised as important, but has yet to be integrated sufficiently in the EIA process” (Burdge and Vanclay, 1996:66).

Burdge (2003b) further writes that engineers, architects and planners want to know about social impacts in analytical terms, and not from an approach that makes use of the involvement of the affected population. However, this author agrees with Youngkin *et al.* (in Burdge, 2003b:226) that “… a big benefit of the integration of EIA and SIA is social learning by the proponent, agency planners and the community. The outcome is the successful implementation of the project or programme”.

The ICGP (1994:9) summarises the importance of commencing with the SIA early on in the development process by stating: “Social impacts actually begin the day the action is proposed and can be measured from that point… From the time of the earliest announcement of a pending policy change or rumour about a project, both hopes and hostilities can begin to mount…”. Assefa *et al.* (2007:1458) describe how impact assessments can influence decisions in the planning of a project: “Since some decades ago, there has been a concern for resource depletion and environmental pollution associated with building properties and surrounding infrastructures. In addressing such impact of the built environment, there is a recognition of the existence of alternative building materials, fuels for energy supply, source for water supply and options for wastewater treatment as well as technologies for waste handling and disposal. Nevertheless, for a long time, the choice between such alternatives was dictated by factors such as differences in prices and aesthetic values”.

2.3 Principles of SIA

In order to conduct a SIA that is valid and comprehensive there are certain principles that should be adhered to. The updated guidelines of the ICGP (2003) list the following principles for SIA.

- Achieve extensive understanding of local and regional populations and settings to be affected by the proposed action, programme or policy.
- Focus on the key elements of the human environment related to the proposed action, programme or policy.
- The SIA is based upon sound and replicable scientific research concepts and methods.
- Provide quality information for use in decision-making.
- Ensure that any environmental justice issues are fully described and analyzed.
- Undertake project, programme or policy monitoring and propose mitigation measures if needed.

Gamboa (2006) describes the EIA system followed in Chile and, based on that, emphasises the importance of involving as many parties and members of the public as possible. He gives three reasons why social actors' opinions should be taken into account:

1) Every member of society has the right to express his/her views where he/she will be affected;
2) Taking the opinions of a wide group of people into account will better confront the increasingly complex impacts; and
3) When more people participate and reach a solution to conflicting interests, the chances are better that the policy will be successfully implemented.

These reasons apply to both environmental impacts and social impacts.

To the above, Nooteboom (2007) adds that impact assessment will create transparency as well as promote accountability.

2.4 Procedures when conducting SIAs

Many methodologies for conducting SIAs exist, each with its own merit. There is, however, not one methodology that will be appropriate for assessing social impacts of all new developments. The social impacts of a new national transport system will, for example, be different from the social impacts of a residential cluster development, and different impacts will have to be identified and measured for each of these. Which method to use will depend on the type of development and the existing social environment that will be affected. "Choosing appropriate

tools and methods depends on the purpose and focus of the impact assessment, its context, the capacities and skills of those involved and the resources available. One of the major skills needed by those involved in impact assessment is the ability to find an appropriate combination and sequencing of tools and methods" (Roche, 1999:97).

According to Wolf (in Soderstrom, 1981) SIAs' emphasis on prediction and control sets it apart from pure science, where the emphasis is on description (analysis) and explanation. The reason for this is that it aims to predict social effects while a project is still in its planning phase, and thus before the effects have occurred. Therefore, Eigerman (in Soderstrom, 1981) lists five considerations for impact assessment methodology:

1) Categories of impact stimuli (what factors within the plan may produce the change);
2) A baseline from which deviations can be measured;
3) Quantitative and qualitative impact measures (how much and what kind of change);
4) Temporal dimensions (frequency and duration of change); and
5) Spatial dimensions (where the change takes place).

Different approaches to SIA, existing methodologies for conducting SIAs, steps that should be followed when conducting SIAs as well as factors to be considered will be discussed in the next paragraphs.

2.4.1 Approaches to SIA

Approach in this context refers to determining the appropriate technique to collect data during the SIA process and will vary depending on the nature of the planned development and the affected environment as "…(s)ome techniques are more effective when addressing specific kinds of questions or topics" (Neuman, 1997:30).

Finsterbusch *et al.* (1990), supported by Neuman (1997), describe the following approaches to collection of data in SIA.

- Surveys: survey techniques are used by asking people questions in a written questionnaire. Questionnaires can vary in degrees of structure – some can be structured, while others can be semi-structured or open.
- Demography of the project population: demography of the project population makes use of existing statistics on a specific part of a population. Statistics obtained from censuses would be an example and this is often used to describe the baseline information of an affected community.
- Informant interviewing: an informant is a member with whom a researcher develops a relationship and who tells about, or informs on, the affected environment.

- Investigative journalism.
- Donor agency experience with the monitoring and evaluation of development projects.
- Workshop approaches, for example information collected during a public meeting.

Carley (1983) adds two more categories of approaches to SIA:

1) Participatory approaches – arguments in favour of participatory approaches include the stance that SIA methodologies often have a political agenda and that public participation brings about balance to the process. Through participatory methods very important informal social networks and relationships are considered. These informal networks are often ignored due to time and resource constraints; and
2) The No-action Alternative Approach.

The No-action Alternative Approach is also commonly referred to as the 'no-go alternative'. This approach requires measurement of impacts if the development was *not* to take place, in other words, if the *status quo* was maintained. These impacts are used as a benchmark against which anticipated impacts of the development is considered.

Using only one approach when conducting an SIA is often not sufficient and will compromise the quality of the product. Using the demography of the project population will for example form the baseline in any project against which possible social impacts will be identified, while surveys, informant interviews or a workshop approach will assist in the identification of possible social impacts by providing feelings or opinions about the planned project. In addition, making use of the No-action Alternative Approach will enable the researcher to compare a proposed development's impacts should the development take place, to the impacts of maintaining the *status quo* (if the development was not to take place).

2.4.2 Existing methodologies for SIA

Becker (2003) writes that SIA practitioners have typically neither had the time or inclination in the past to study subjects like epistemology, methodology or theory formation and this neglect has for a long time been of no consequence. The large number of methodologies for SIA described in literature indicates, however, that this is changing. It is impossible to name all the methodologies available for SIA, but an attempt is made to highlight some methodologies applicable to a variety of different types of developments and environments.

The EcoEffect method described by Assefa *et al*. (2007) uses concepts and tools from both the social science and natural sciences. The 'external assessment' uses knowledge related to natural science and the 'internal assessment' makes use of social science concepts and methodologies. Questionnaires, measurements and inspections are used to measure mainly the

experience of occupants, in other words what they think and how they feel about the different aspects of the indoor and outdoor environment. Impact categories are limited to health effects (allergy, arthritis, 'sick building syndrome', noise-driven sleeping difficulty and outdoor health effects), and environmental factors of the indoor and outdoor environment (indoor: air quality, thermal comfort, noise and day light; outdoor: air pollutants, noise, shade, wind, biodiversity, biological production and storm water).

Carley (1983) distinguishes between Numerically Oriented SIA Methods, and Participatory and Combination SIA Methodologies. Numerically Oriented SIA methods include the following.

- The Battelle Indicators Model – a set of social indicators are used to measure predicted social impacts. It suggests that direct demographic and economic impacts are related, through indirect impacts (changes), to social impacts, influencing decision-making and planning.
- The Social and Economic Assessment Model – a computerized simulation model that is designed to estimate socioeconomic changes that accompany energy and industrial developments.
- Community-level Impacts Projection Systems – information is fed through the model and results generated. This method is mainly used in energy-related developments.
- SIMPACT – this model was developed in preparation of the EIA process for a steel plant. Socio-economic and secondary environmental changes in a defined region are quantified.
- The BOOMH Model – this model was designed to predict probable effects of mitigation measures relating to housing shortages and other problems in so-called boomtowns. Two aspects are focused on: supply and demand for temporary and permanent housing, and the use and value of land.
- Texas Assessment Modeling System – an adaptation of the North Dakota Regional Environmental Assessment Programme's models. It is used to provide baseline and single- or multiple-project impact projections for six regions in Texas specifically.

A major difference between the Numerically Oriented SIA Methods, and Participatory and Combination SIA Methodologies is the purpose of the SIA. Numerically Oriented SIA Methods are aimed at predicting social effects of change, while Participatory Oriented Methods are aimed at accomplishing public participation in the decision-making process (Carley, 1983). Both these aspects are important.

Arup (a global design and business consulting firm) designed a model called SPeAR (Sustainable Project Appraisal Routine) that provides a methodology for responding to

sustainability objectives, assisting in setting objectives for sustainability, tracking the sustainability of a project and assessing alternatives. It highlights strengths and weaknesses, provides areas of opportunity and provides information to assist in decision-making. The outcome is a diagram that gives a profile of the sustainability of a project (www.arup.com).

It is clear that in most cases methodologies are developed to be of use in a specific development field or industry, or even geographic areas. The reason is that social impacts likely vary from one country to the next. The type of development planned also modulates the type of social impacts that can be anticipated. Therefore, the accuracy of impact predictions could increase if a methodology is used that is designed for that specific type of development and within a certain geographical area.

2.4.3 Steps for conducting a SIA

The ICGP (2003) identified ten steps (listed below) that should be followed during each of the four stages (see p. 6, above) of a project when conducting a SIA:

1) Public involvement: develop an effective public plan to involve all potentially affected publics;
2) Identification of alternatives: describe the proposed action or policy change and reasonable alternatives;
3) Baseline conditions: describe the relevant human environment / area of influence and baseline conditions;
4) Scoping: after obtaining a technical understanding of the proposal, identify the full range of probable social impacts that will be addressed based on discussion or interviews with numbers of all potentially affected;
5) Projections of estimated effects: investigate the probable impacts;
6) Prediction of responses to impacts: determine the significance of the identified social impacts;
7) Indirect and cumulative impacts: estimate subsequent impacts and cumulative impacts;
8) Changes in alternatives: recommended new or changed alternatives and estimate or project their consequences;
9) Mitigation: develop a mitigation plan; and
10) Monitoring: develop a monitoring programme.

These steps are an extension of the earlier Western and Lynch (2000) 5-step plan for conducting SIAs.

- Step 1: Clarifying the issue – clarifying in general terms what happened or is planned to happen.
- Step 2: Preliminary scoping – answering the following questions: what is the general nature of the issue to be addressed, how much time is available, what resources are available and what data are available?
- Step 3: Structuring the SIA / definitive scoping – define the research methodology to be employed.
- Step 4: Undertaking the SIA – the actual undertaking of the research.
- Step 5: Drawing the SIA together – addressing the overall issues identified in a preliminary fashion in Step 1.

2.4.4 Factors to be considered

In addition to the proposed steps to be followed when conducting SIAs, a number of factors that should be considered when conducting a SIA are named by Carley (1983).

- Data requirements – relevant data are more important than comprehensive data.
- Resource capability – the SIA design is related to available resources.
- Quantification and qualification – these are equally important.
- Disaggregation of data – quantified data is disaggregated, but not to the extent that it becomes too complex to use.
- Probability of impact occurrence – high, medium or low.
- Significance of impacts.
- Sensitivity analysis – measuring of sensitivity to variations in the assumptions.
- Robustness measures – indicates how much change in variables must occur before there is a reversal of ranking in the outcomes.
- Hierarchical structure – the structure of presentation of findings.
- Value assumptions.
- Mitigation measures – for negative impacts.
- Communicability – the SIA must be presented in a manner that is clear and understandable.
- Public debate – the SIA must be presented in such a way that it will facilitate public debate.
- Causal understanding.
- Validity – it happens seldom that, after the event, checks are done to compare anticipated impacts with actual impacts.

2.5 Shortcomings of SIA procedure and methods

While all the above methods are valuable tools when conducting a SIA, they are not easily applied when reporting social impacts only as a small section of an EIA. There are also general shortcomings that cannot always be mitigated, but that should be acknowledged as potentially having an impact on the quality of the SIA. These shortcomings can be summarised in the following three categories:

1) The background of the person conducting the SIA: Aucamp (2009a:118) states: "Given the fact that it is difficult to define social impacts and that no formal training for SIA practitioners exists in South Africa, there are myriad methodological problems. People with different qualifications ranging from environmental to social sciences conduct social impact assessments". The ideal is that qualified SIA practitioners complete the SIA section of the EIA, but the reality is that many environmental consultancies do not have people with a social sciences background employed and in most cases the Environmental Assessment Practitioner ends up completing the section in the EIA that pertains to social impacts.
2) The availability of information: Information on, for example the number of employment opportunities to be created by the development, is most of the time not readily available during the planning phase of the development. Since the SIA, as part of the EIA process, is conducted during the planning phase of the development, the lack of available information poses a problem. Carley (1983) writes that good decisions are based on adequate information and adds that some information is better than none. He continues by saying that SIA methodology can be developed to be applicable to many situations, or tailored to a particular situation; and
3) The lack of a holistic view of developments and their impacts: O'Faircheallaigh (1999:64) writes that another problem associated with SIA is "… the tendency to focus on the impact of individual developments in isolation and over the short to medium term, which means that SIA may ignore the cumulative and longer term impacts that a succession of projects can have".

With the development of SIA as a discipline many terms and issues addressed changed, and will continue to change. This suggests the need for methodologies that are used in certain contexts to be reviewed so that they do not become irrelevant and overlook issues that are currently viewed as important but were in the past not regarded as significant. Freudenburg (1986) gives the example of issues that would in the 1970's have been considered controversial and deserving of mention but that are now the focus of much higher levels of consensus.

3. SIA in South Africa

3.1 Legislation in South Africa with regards to SIA

Aucamp (2009a) writes that there is a clear mandate in the Constitution of the Republic of South Africa (Act 108 of 1996) to include social issues in the EIA process. The Bill of Rights in the Constitution states:

> Everyone has the right –
>
> (a) to an environment that is not harmful to their health and wellbeing; and
>
> (b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that –
>
> (i) prevent pollution;
>
> (ii) promote conservation; and
>
> (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

To this effect the National Environmental Management Act (Act 107 of 1998) (NEMA) states that, whereas many inhabitants of South Africa live in an environment that is harmful to their health and well being, the following (relating to the social environment) are acknowledged.

- Everyone has the right to an environment that is not harmful to his or her health or well-being.
- The State must respect, protect, promote and fulfil the social, economic and environmental rights of everyone and strive to meet the basic needs of previously disadvantaged communities.
- Inequality in the distribution of wealth and resources, and the resultant poverty, are among the important causes as well as the results of environmentally harmful practices.
- Sustainable development requires the integration of social, economic and environmental factors in the planning, implementation and evaluation of decisions to ensure that development serves present and future generations.
- Everyone has the right to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that -
    1) prevent pollution and ecological degradation;
    2) promote conservation; and
    3) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

Aucamp (2009b) lists environmental principles that must be adhered to in all Acts pertaining to the environment. The following NEMA principles listed refer directly to the human/social environment.

- Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.
- Development must be socially, environmentally and economically sustainable.
- Environmental justice must be pursued as to not unfairly discriminate unfairly discriminate against any person, particularly vulnerable and disadvantaged persons.
- Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human wellbeing must be pursued.
- Decisions must take into account the interests, needs and values of all interested and affected parties, including all forms of traditional and ordinary knowledge.
- The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment.

Section 24 of NEMA states that the potential impact on the environment, socio-economic conditions and cultural heritage of activities that require authorisation must be considered, investigated and assessed prior to implementation, in order to give effect to the general objectives of integrated environmental management.

It is clear from the above that, although there are no explicit requirements for conducting comprehensive SIAs in NEMA, environmental and social interests should be considered equally important.

In addition, according to Regulation 7 (1) of the Environmental Impact Assessment (EIA) Regulations that were passed in terms of Chapter 5 of NEMA in April 2006 the decision-making authority is entitled to all information that has or may have the potential of influencing any decision with regard to an application. It can be argued that, since social impacts have the potential of influencing the authority's decision, as much information on potential social impacts as practicably possible should be supplied to the decision-making authority as part of the application.

The EIA Regulations also prescribe the content of both Basic Assessment Reports and EIA Reports and include the following features applicable to social impacts.

- A description of the environment that may be affected by the proposed activity and the manner in which the geographical, physical, biological, *social*, economic and cultural aspects of the environment may be affected by the proposed activity (Content of Basic Assessment Reports: Regulation 23 (2)(d) and Environmental Impact Assessment Reports: Regulation 32 (2)(d)).
- A description of the need and desirability of the proposed activity and any identified alternatives to the proposed activity that are feasible and reasonable, including the advantages and disadvantages that the proposed activity or alternatives will have on the environment and on *the community that may be affected by the activity* (Content of Basic Assessment Reports: Regulation 23 (2)(g) and Environmental Impact Assessment Reports: Regulation 32 (2)(f)).

This, however, is not commonly applied in practice. Field (2006:434) poses the question: "If EIA processes do not consider the three E's (environment, economy and equity) in an integrated fashion, where does this take place and who is responsible? The NEMA is unambiguous in requiring that development should be economically, socially and environmentally sustainable and that a consideration of these aspects *must* be integrated".

3.2 Procedures

According to the 2006 Regulations EIAs have to be conducted according to the following criteria: (1) A Basic Assessment (BA) has to be conducted for any of the listed activities in Listing Notice 1 / Government Notice R386 and, (2) a comprehensive EIA (also commonly referred to as 'Scoping/EIA') for activities listed in Listing Notice 2 / Government Notice R387.

New Draft Environmental Impact Assessment Regulations were published for public comment in February 2009. Although the comment period has ended, the new regulations have not been finalised yet, however it is expected that it will come into force still in 2009.

The content of the new proposed regulations pertaining to the social environment are the same as that of the EIA Regulations of 2006. The Listing Notices and listed activities, however, differ from those in the 2006 Regulations.

Listing Notice 1 will replace Listing Notice 1 / Government Notice R386 of the 2006 Regulations and the activities listed in that Notice will require that a Basic Assessment be conducted. Listing Notice 2 will replace Listing Notice 2 / Government Notice R387 of the 2006 Regulations and

the activities in that Notice will require that a comprehensive EIA be conducted. Listing Notice 3 was added and this Notice lists activities for which a Basic Assessment should be conducted if the activity will take place in certain geographical areas.

When conducting a Basic Assessment or comprehensive EIA information with regards to anticipated social impacts of developments has to be supplied by the applicant (developer) through the Environmental Assessment Practitioner (EAP) who conducts the impact assessment. The Basic Assessment is in the form of a template supplied by the decision-making authority in which specific questions have to be answered with regards to the specific development in question. Refer to Table 1, below, for a summary of the SIA related questions contained in the Basic Assessment Report and Application for Authorisation (to be submitted with the Basic Assessment Report).

Scoping and EIA Reports are written reports (and not templates as in the case of Basic Assessment Reports) and specifications with regards to content are supplied in the EIA Regulations.

When conducting EIAs (both Basic Assessments and comprehensive EIAs) assessing the 'no-go alternative' is compulsory in all nine provinces of South Africa.

There is various environmental impact methodologies that can be used to identify anticipated environmental impacts and that enable the practitioner to suggest mitigation measures for impacts, whether positive or negative, in this context. However, none of the provincial governments require that any methodology be specified and used. In addition, conducting separate Social Impact Assessments (SIAs) is not a requirement. The different provincial departments can request that a separate SIA be done in addition to the EIA but it is seldom requested and is normally the case only for larger developments.

3.3 Critical assessment

Measuring developmental social impacts in South Africa are just as important as identifying environmental impacts, because of the diverse nature of society, the many social challenges that are faced, such as the alleviation of poverty and high unemployment figures, and the fact that a large segment of the population is vulnerable in many respects.

Table 1: Summary of SIA related information required during the EIA process

Province:	**FS**	**NW**	**Gaut**	**KZN**	**NC**	**Lim**	**Mpu**	**WC**	**EC**	**DEAT (National)**
Value and income on completion: ❑ Expected capital value of activity on completion ❑ Expected yearly income that will be generated by or as a result of the activity ❑ Will the activity contribute to service infrastructure or is it a public amenity?										
Employment during development phase: ❑ How many employment opportunities will be created in the development phase of the activity? ❑ What is the expected value of the employment opportunities during the development phase? ❑ What percentage of this will accrue to previously disadvantaged individuals?										
Of these opportunities, how many are: (i) Women, (ii) People with disabilities – female, male, (iii) Youth – female, male										
Employment during operational phase: ❑ How many permanent new employment opportunities will be created during the operational phase of the activity? ❑ What is the expected current value of the employment opportunities during the 1st 10 years? ❑ What percentage of this will accrue to previously disadvantaged individuals?										
Of these opportunities, how many are: (i) Women, (ii) People with disabilities – female, male, (iii) Youth – female, male										
Need, desirability, benefits: ❑ Motivate and explain the need and desirability of the activity (including demand for the activity) ❑ Indicate any benefits that the activity will have for society in general ❑ Indicate any benefits that the activity will have for the local communities where the activity will be located										
Culturally or historically significant elements: ❑ Are there any signs of culturally or historically significant elements, as defined in Section 2 of the National Heritage Resources Act, 1999 (Act No. 25 of 1999), including archaeological or palaeontological sites, on or close (within 20m) to the site? ❑ Will any building or structure older than 60 years be affected in any way?										
Describe the existing social and economic characteristics of the area and the community condition as baseline information to assess the potential social, economic and community impacts.										

Basic Assessment Report	
Application for Authorisation	
Not required in either Basic Assessment Report or Application for Authorisation	

However, as previously indicated, SIA *per se* is not a legislated requirement when conducting EIAs and there is normally a section in the EIA that pertains to social impacts. These sections are not comprehensive and are completed by the Environmental Assessment Practitioner (EAP) who seldom has a social sciences background. Du Pisani and Sandham (2006:715) emphasise the importance of social impacts being assessed by consultants who have been properly trained in social science methods and the lack of importance attached to SIA in general: "Social impacts will have to be taken much more seriously in South Africa, because they are crucial in empowering disadvantaged communities and in strengthening democratic processes".

This, combined with the fact that very little information is required by law and information available at the planning phase of a development project (during which the EIA is conducted) is very limited, poses a serious problem.

Gibson (2006:172) is of the same opinion and writes that concerns with regards to sustainability "have centred on the common and sometimes catastrophic failures of decision-making efforts to take key linked factors into account". Field (2006:420) writes: "Awareness of the lack of relevant information for sustainable development thinking should prompt us to re-examine the type of information generated by legal processes aimed at regulating development. For example, if the EIA process only generates data on the environmental impacts of a development, it will be difficult for the regulator to employ sustainable development thinking".

Field (2006:423) continues: "In South Africa, in light of the past and of the current state of socio-economic development, it is therefore better to urge a broad-based appropriation and institutionalisation of 'sustainable development thinking' than it is to call for the strengthening of 'environmental protection' measures: the environment stands a better chance of being valued, respected, conserved, protected, restored and enhanced if the focus is on sustainable development".

Information relating to the social environment and needed as part of the EIA process is often limited to the amount of employment opportunities that will be created during the construction and operation phases respectively, and what the benefits will be for the community who lives there. These calculations are largely done by means of guessing. In addition, no methodology for completing the social impact section is prescribed by South African regulations.

Du Pisani and Sandham (2006) evaluated SIA as part of EIAs in the South African context and came to the following conclusions.

- The problems in SIA practice that are experienced in other parts of the world are also evident in South Africa.
- Problems include: institutional, financial and professional constraints, as well as problems associated with approach and methods.
- SIA in South Africa is neglected and does not receive the professional attention it deserves in a country facing enormous social challenges.

Recommendations made by them (Du Pisani and Sandham, 2006) include the following.

- Significant social impacts identified in an EIA should be assessed by an SIA specialist.
- A policy framework for SIAs should be developed by the authorities responsible for EIAs.
- In the guidelines for EIAs attention should also be paid to methodological guidelines for conducting SIAs.

It is therefore clear that much work still need to be done to ensure that the necessary attention is given to identify and mitigate social impacts during the planning phase of projects.

4. Problem statement

Development can take many forms. Examples of developments often encountered during the EIA process include residential (for example residential estates or township developments), retail (for example shopping centres), commercial (for example warehousing), light or heavy industrial (such as industrial plants), infrastructure (such as sewage treatment works or water supply infrastructure), mining and agriculture (for example new facilities to house poultry).

Apart from location (site and situation) the social impacts of a development will vary depending on the nature of the development, and therefore most methodologies are developed specifically for certain fields or industries, thereby increasing accuracy.

Because of this, and the fact that any development has social impacts, a need for a suitable, localized framework to assist EAPs to complete the social impact section of the EIA has been identified.

Therefore, the specific aim of this study is to develop an instrument that can be used for completing the SIA section of EIAs in the South African context, by quantifying impacts. It is explicitly not the aim to develop yet another methodology for conducting comprehensive SIAs, separate from the EIA process. Apart from the fact that many such methodologies for SIA already

exist internationally, conducting a comprehensive separate SIA for a planned development is not explicitly required by law in South Africa, as already stated, and it is not practically achievable due to resource constraints.

Thus, by developing an instrument that can assist Environmental Assessment Practitioners to complete the SIA section of EIAs (both for Basic Assessments and comprehensive EIAs), a more practical, accurate and comprehensive picture of anticipated social impacts could be rendered than is currently the case.

More specifically, the objectives are to:

1) design a simple framework for completing the SIA section of EIAs, to be used by EAPs without a background in social sciences;
2) design a procedure of application to assist with using the instrument; and
3) demonstrate the application of this framework by way of a case study.

The framework's focus will be on residential developments specifically, because (as already indicated above) social impacts of different forms of developments vary and different types of developments all have specific types of social impacts. Residential development has been selected to develop the initial instrument because of its priority in the present South African development scenario. A framework, based on the same principles, can ultimately be developed for the different types of developments respectively.

5. Developing a Social Impact Assessment framework to use in EIAs for residential developments in SA

5.1 SIA in the context of residential developments in SA

There are various factors that will determine whether a Basic Assessment or a comprehensive EIA, according to South African environmental legislation, is required for planned residential developments. Table 2 summarises the factors that in most cases determine which process should be followed for planned residential developments.

Table 2: Summary of listed activities mainly determining which EIA process to be followed

Factor to be considered:	Listing notice 1 / Government Notice R386: Basic Assessment process	Listing notice 2 / Government Notice R387: Comprehensive EIA process
Amount of liquid effluent to be generated by the planned development	The construction of facilities or infrastructure, including associated structures or infrastructure, for – the treatment of effluent, wastewater or sewage with an annual throughput capacity of more than 2 000 cubic metres but less than 15 000 cubic metres (Activity 1 (s)).	The construction of facilities or infrastructure, including associated structures or infrastructure, for – the treatment of effluent, wastewater or sewage with an annual throughput capacity of 15 000 cubic metres or more (Activity 1 (p)).
Size of development footprint	The transformation of undeveloped, vacant or derelict land to – (a) establish infill development covering an area of 5 hectares or more, but less than 20 hectares; or (b) residential, mixed, retail, commercial, industrial or institutional use where such development does not constitute infill and where the total area to be transformed is bigger than 1 hectare (Activity 16).	Any development activity, including associated structures and infrastructure, where the total area of the developed area is, or is intended to be, 20 hectares or more (Activity 2).

Other factors, that are not regularly applicable to the establishment of residential developments, but in some cases may be relevant, include.

- Whether the development site is located in a protected area contemplated in the National Environmental Management: Protected Areas Act (Act 57 of 2003).
- Proximity of the development site to rivers, streams or the sea.
- Removal of indigenous vegetation on the development site.
- The abstraction of groundwater for the development.
- Characteristics of associated roads to be constructed.
- Whether land will be subdivided.
- Transformation of land zoned as public open space or conservation area.

It is clear from the above that both a Basic Assessment and a comprehensive EIA can be applicable to residential developments and that the process to be followed will depend on the specifications of the specific development.

As mentioned before, a few changes to the listed activities have been made in the proposed new Regulations. Examples are:

1) The amount of liquid or effluent to be generated and treated on the site is proposed to change from more than 2 000 cubic metres but less than 15 000 cubic metres (for a Basic

Assessment) and 15 000 cubic metres or more (for a comprehensive EIA) to more than 5 000 cubic metres but less than 50 000 cubic metres (for a Basic Assessment) and 50 000 cubic metres or more (for a comprehensive EIA); and

2) The word 'infill' in Activity 16 (a) of Listing Notice 1 above (2006 Regulations), has been replaced by land uses (residential, mixed, retail, commercial, recreational, industrial or institutional) and the phrase "inside an urban area" has been added, while (b) is proposed to change from "bigger than 1 hectare" in Listing Notice 1 of the 2006 Regulations to "bigger than 1 hectare but less than 20 hectares". Activity 2 in Listing Notice 2 above (2006 Regulations) will in the new proposed Regulations include the land uses used in Activity 16 of Listing Notice 1 mentioned above.

Should the 2009 proposed Regulations become effective, residential developments will still be applied for by conducting either a Basic Assessment or a comprehensive EIA, depending on the development's specifications, as is currently the case.

A more explicit focus on residential developments is required, because of the large number of such developments occurring in the country and the many variations of the traditional residential development that each has unique social impacts. With the establishment of more and more 'non-traditional types' of residential developments, the need to accurately assess social impacts of such developments has become increasingly important.

One example of such a new residential concept is what is commonly referred to as 'Cosmo Cities' (named after a specific development north of Johannesburg) or mixed income housing developments. These developments cater for both the working class (by offering affordable homes) and low-income class or unemployed (by offering subsidized alternative housing to that of informal settlements, including services such as water, sewage, electricity and refuse removal). These developments are planned to realize government's target of eradicating informal settlements by 2014.

Another new residential concept, for example, is agricultural estates, where the development comprises housing as well as agricultural activities that generate income, subsidizing or even eliminating monthly stand levies (payable by stand owners) and subsequently attracting investment. By applying labour intensive farming methods and training labourers in more advanced levels of work, employment opportunities are created. In addition to this labourers could share ownership and management of the venture by forming a partnership with the developer and individual stand owners, offering shareholding in the development and thus contributing to Black Economic Empowerment.

With regard to all types of residential developments particular attention should be paid to impacts on vulnerable segments of the population (ICGP, 1994). The final social impact of a residential development such as Cosmo City, for example, will only become clear years or even decades after it took place: “Some social impacts can be of short duration, while others can last a lifetime” (ICGP, 1994:6).

Thus, in the sphere of South African residential development there is a need for a framework that will assist EAPs, without social science backgrounds, in completing the SIA section in EIAs, so that a more comprehensive picture can be painted of expected social impacts of a development than is currently the case.

5.2 Description of the framework

In the following section a description of the framework is provided under the following subsections: format of the framework, impact groups, weights, description of the impact and mitigation measures, evaluation factors, rating and scale, calculation of values and final score, and recommendations.

5.2.1 Format of the framework

The framework makes use of a Microsoft Excel Spreadsheet, which does the calculations based on formulae set up in the template, as well as a table created in Microsoft Word. Both Microsoft Excel and Microsoft Word are easily accessible and present in most places of work, and will thus enable the person conducting the EIA to use the electronic template to complete the SIA section. The fact that the template is in an electronic format should not pose a problem, since it is required that Basic Assessment Reports and EIA Reports are completed electronically, and not by hand. The Excel Worksheet can easily be copied and pasted into the respective reports, as was done in this article.

5.2.2 Impact categories and variables

The framework proposed by this study, to be applied when conducting SIA sections of EIAs for residential developments specifically, was developed by identifying four main categories of impacts that would apply to residential developments. These are:

1) Employment;
2) Service delivery and accessibility;
3) Sense of community and identity; and
4) Characteristics of the development and environment.

Aucamp (2009a) states that it is often useful to make use of SIA variables when trying to understand and identify social impacts. She continues by saying that it is important to remember that social impacts are context-specific and that each project therefore needs to be considered within its specific context.

The four categories of impacts, specific to residential developments, were derived from categories and variables listed by practitioners and literature in the field of Social Impact Assessment. The categories and variables, tabled below, do not pertain only to residential developments, but is a broad description that includes developments of various sorts.

Vanclay (cited in DEAT, 2006:10) identified categories of social impacts that can be used as a guideline to ensure that all potential impacts are considered (see Table 3 below).

Table 3: Categories of social impacts

Health and social well-being	Death Nutrition Actual health and fertility Perceived health Mental health Aspirations for future Autonomy Stigmatisation Feelings in relation to the project
Quality of the living environment	Physical quality – exposure to noise, dust, risk, odour etc. Leisure and recreation opportunities Aesthetic quality Availability of housing Quality of housing Physical and social infrastructure Personal safety and hazard exposure Crime and violence
Economic impacts and material well-being	Workload Standard of living Economic prosperity and resilience Income Property values Employment Replacement cost of environmental functions Economic dependency
Cultural impacts	Change in cultural values Violation of culture Experience of being culturally marginalized Commercial exploitation of culture

	Loss of local language Loss of natural and cultural heritage
Family and community impacts	Alterations in family structure Obligations to family/ancestors Family violence Social networks – interaction with others in community Community connection – sense of belonging Community cohesion Social differentiation and inequity Social tension and violence
Institutional, legal, political and equity impacts	Capacity of government agency to handle workload generated by project Integrity of government agencies – absence of corruption and competence of agency Legal rights Human rights Participation in decision making Access to legal advice Fairness of distribution of impacts across community
Gender relations	Women's physical integrity – can decide about own body Personal autonomy of woman – independence in all aspects Gendered division of labour – income, household, childbearing and rearing of children Access to resources and facilities Political emancipation of woman

In addition, the Interorganizational Committee on Guidelines and Principles for SIA (2003) provides a list of social variables that must be investigated when conducting socio-economic impacts assessments. These social variables are listed in Table 4 below:

Table 4: Social variables

Population change	Population size, density and change Influx and outflow of temporary workers Presence of seasonal (leisure) residents Relocation of individuals or families Racial and ethnic composition and distribution
Community/Institutional arrangements	Voluntary associations Interest group activity Size and structure of local government Industrial/commercial diversification Employment/income characteristics Local/regional/national linkages Employment equity of disadvantaged groups Historical experience of change
Political and social resources	Distribution of power and authority Inter-organisational cooperation Conflict between newcomers and long term residents

	Identification of stakeholders Interested and Affected Parties Leadership capability and characteristics
Individual and family level impacts	Displacement/relocation concerns Trust in political and social institutions Residential stability Family and friendship networks Density of acquaintanceships Perceptions of risk, health and safety Attitudes towards the proposed action Concerns about social well-being
Community resources	Change in community infrastructure Indigenous populations Changing land use patterns Family and friendship networks Effects on known cultural, historical, sacred and archaeological resources

Under the four main categories of potential social impacts of residential developments (listed in Table 5 below) that were identified to be used in this framework, are related subcategories, each to be rated when completing the table developed for this framework.

Table 5: Main categories of impact variables and subcategories, as used in the framework

Main categories of impact variables	**Subcategories to be assessed**
1. Employment:	❑ Temporary employment opportunities created ❑ Temporary employment opportunities benefiting previously disadvantaged persons ❑ Permanent employment opportunities created ❑ Permanent employment opportunities benefiting previously disadvantaged persons ❑ Transfer of skills ❑ Other opportunities for income generation
2. Service delivery and accessibility:	❑ Access to refuse removal, water, sewage / sanitation, electricity ❑ Access to education, health services, transport, recreation, other community services ❑ Safety and security ❑ Emergency preparedness (e.g. fire, floods) ❑ Local authority administration ❑ Degree of community involvement, representation, investment, empowerment
3. Sense of community and identity:	❑ Residential stability, displacement, relocation ❑ Promotion of integration and equity ❑ Reactions to the development – attitudes, stress (based on Public Participation (PP) process followed) ❑ Preservation of culturally and historically significant elements
4. Characteristics of	❑ Traffic impacts

development and environment:	❑ Noise ❑ Air quality ❑ Aesthetic considerations

These impact variables include possible cumulative impacts of the development.

5.2.3 Weights

"An unweighted index is an index in which each item has equal weight. It involves adding up the items without modification, as if each was multiplied by 1 (or -1 for items that are negative). In a weighted index, a researcher values or weights some items more than others. The size of weights can come from theoretical assumptions, the theoretical definition, or a statistical technique such as factor analysis" (Neuman, 1997:156).

A weight was awarded to each potential impact variable listed above, based on the following criteria (DEAT, 2006):

1) Duration of impact;
2) Value of benefits and costs to impacted groups (keeping the existing needs specifically in the South African context in mind);
3) Extent to which identified impacts are reversible or can be mitigated; and
4) Likelihood that an identified impact will lead to a secondary or cumulative impact.

An example of impact variables that were assigned different weights is 'Temporary employment opportunities created', which was assigned a weight of 2.5%, as opposed to 'Permanent employment opportunities created', which was assigned a weight of 7.5%. Similarly, a weight of 7.5% was assigned to 'Access to refuse removal, water, sewage/sanitation, electricity', while a weight of 2.5% was assigned to 'Aesthetic considerations'.

The weights are displayed in a column of the template and weights for all the impacts total 100%.

5.2.4 Description of the impact and mitigation measures

The Environmental Assessment Practitioner has to explain the anticipated social impact of the proposed development, describing how the impact would present itself, and how the rating is subsequently awarded. This will enable the authorities to get a clearer picture of anticipated impacts.

It is important to keep in mind that the same impact variable can represent either a positive or negative impact, depending on the project specifics. Examples of such cases are the following.

- Impact on aesthetics: If the site is a degraded piece of land that is infested with evasive plant species and illegal dumping of refuse takes place on the site, a new residential development will most likely have a positive impact on the aesthetics of the site. Similarly, if the development is to be located on a pristine piece of land, which gives the area a rural character, construction of a residential development can impact negatively on the aesthetics of the area.
- Services: If the area's service infrastructure is under pressure or insufficient, building a new residential development in the area can lead to interruptions in services and subsequently affect existing residents negatively, while the impact will be positive if the construction of a residential development will provide services to residents who previously did not have access to services.

In addition to explaining impacts, mitigation measures must be suggested for each of the groups, to minimize any negative impacts or even increase the value of each positive impact. These mitigation measures can ultimately be included in the Environmental Management Plan that is required when conducting an EIA as well and must be realistic and feasible. It will also supply the authorities with a list of steps that can be taken to improve or enhance positive impacts and lessen negative impacts. Identified mitigation measures will typically be included as conditions for granting of environmental authorisation at the conclusion of the EIA process.

The term 'mitigation' is often associated with 'correction', while in this case mitigation measures should be introduced in the planning phase already to prevent negative impacts and not rectify them. For the purpose of this study the term 'mitigation' is used because the framework will be utilised during the planning phase of a project and because this is the term used in the existing formats for EIA in South Africa.

After describing the impact and proposing mitigation measures, a value is awarded to each of the impacts.

5.2.5 Evaluation factors

Various factors were identified that the EAP should keep in mind when awarding a rating to an impact. The following should be kept in mind with *every item* that is evaluated.

- The size and character of the development (e.g. exclusive golf estate, residential cluster development, mixed income housing development, resort development mainly for weekend or holiday use) – this will influence the number of people that will be affected and the ways in which they are affected.

- The duration of benefits or losses (duration of impacts) – how long impacts will be in effect (DEAT, 2006). Employment opportunities that are created during construction will, for example, be of a temporary nature and will cease when construction is complete, while employment opportunities created during operation will be of long term or even permanent, such as upkeep of grounds, maintenance work, security services and operation of shops or businesses in the development.
- The likelihood of the impact occurring (DEAT, 2006). If an impact is anticipated it does not mean that it will definitely occur. In such cases the assessment practitioner will have to estimate the likelihood that the impact will occur.
- The extent of the effects – how many people are affected (DEAT, 2006).
- Presence or absence of controversy over the project (DEAT, 2006).
- The importance of the impacts (weightiness). The creation of a large number of permanent jobs may for example be seen as carrying more weight than a select group of current land owners or occupants being concerned about the traffic impact the development may have on the area. It is important though to mitigate all negative impacts, such as an increase in traffic volumes in this case.
- The baseline conditions. Impacts should be measured against the existing conditions before the development takes place. If a person were to move to a residential development from a house in an affluent neighbourhood, the value given to 'service delivery and accessibility' will not be high, even if service delivery in the new development will be excellent. The reason for this is that service delivery in the person's previous residential conditions was probably of the same excellent nature. The baseline against which it would be measured will thus not be different from the service delivery levels in the new development and a neutral value will be awarded, because no improvement in service delivery levels is anticipated. For a person who moves there as an employee at the development from less affluent circumstances a higher value would be awarded, because there would probably be an improvement in service delivery levels compared to the previous residential conditions.

5.2.6 Rating and scale

Keeping the above factors in mind the EAP has to award a rating to the impact, based on the specifics of the development. Ratings should be assigned to impacts as expected *after* mitigation and not before mitigation measures have been implemented, in order to be able to get the most accurate score possible for the development should suggested mitigation measures be adhered to.

In order to do so the Likert Scale was used, with responses ranging from -2 (highly negative impact) to 2 (highly positive impact) and 0 being the neutral category. The advantage of using the Likert scale is that it is simple to use, while its limitation is that different combinations of scale items can result in the same overall score (Neuman, 1997). This risk was addressed by adding weights to impact variables.

The following scale is to be used to measure each of the impacts:

Table 6: Proposed scale for rating and values

**No impact / impact not rated: the aim is to measure positive and negative impacts; it is important to use the rating 0 only when there will be no impact at all or when the variable or impact is not applicable to the specific development at all. Impact practitioners should not award the rating 0 when they are simply unsure about anticipated impacts.*

The rating scale is from -2 (highly negative impact) to +2 (highly positive impact), with 0 representing no impact or when the impact is not rated. The scale measures both social benefits and social costs, with ratings 1 and 2 representing social benefits (positive impacts) and ratings -1 and -2 representing social costs (negative impacts). Rating 0 represents no impact at all (no improvement or deterioration), in other words if the new conditions will be the same as the baseline condition against which it was measured. It is important to note that rates awarded cannot be substantiated by any facts at this stage of any project (planning stage) and that rating is thus based on impacts that are merely anticipated.

Based on the ratings awarded and weight of the impact, a final value will be awarded for social impacts related to the development and recommendations must be made according to the final score calculated. Elements of the calculations in this proposed framework were loosely based on generic methodologies that are often used for performance appraisals in the workplace.

5.2.7 Calculation of values and final score

From the rates awarded to impacts, a value is calculated, by using 50 as the baseline to calculate values for positive or negative impacts (in order to get a final value expressed in percentage).

Therefore the value for the rating 0 is given as 50. Because 50 / 3 = 17 (rounded off) the values (in intervals of 17) for impacts are calculated as follows.

- For rating 2: *83 = 50 + (50/3*2)* where 50 is added because the rating is positive and the final percentage should be higher than 50, 3 represents the number of intervals of 17 between 50 and 100, and rating 2 is on the second interval (of 17) above 50 (thus multiplied with 2).
- For rating 1: *67 = 50 + (50/3)* where 50 is added because the rating is positive, 3 represents the number of intervals of 17 between 50 and 100, and rating 1 is in the first interval above 50 (thus not multiplied with anything).
- For rating 0: 50 is used as the baseline, as explained above, and therefore no calculations for a value is necessary.
- For rating -1: *33 = 50/3*2* where 50 is not added because the rating (-1) is negative and under the baseline of 50, 3 represents the number of intervals of 17 between 0 and 50, and rating -1 is on the second interval above 0 (thus multiplied by 2).
- For rating -2: *17 = 50/3* where 50 is not added because the rating (-2) is negative and under the baseline of 50, 3 represents the number of intervals of 17 between 0 and 50, and rating -2 is on the first interval above 0 (thus not multiplied with anything).

One value (final score), expressed in percentage, can finally be calculated for social impacts, by adding all the values, for the specific development being assessed.

5.2.8 Recommendations

Based on the final score obtained, recommendations should be made on whether the proposed development should be approved or not from a social point of view. Recommendations should be based on the corresponding final scores listed in Table 7 below.

Table 7: Final scores with recommendations

Final score	Recommendation
Higher than 67%	The development will have a very positive social impact and should go ahead.
51% - 67%	The development will have a moderately positive social impact and can go ahead.
50%	The development will have no social impact at all and thus no positive or negative recommendation can be made.
33% - 49%	The development will have a moderately negative social impact and unless impacts are mitigated satisfactorily the development should rather not go ahead.
Less than 33%	The development will have a very negative social impact and should not go ahead.

6. Method of application to assist with using the instrument

6.1 Project phase during which the framework should be used

The ideal is that a SIA be conducted during every phase of the project, because actual impacts may turn out to be different from anticipated impacts. However, it would not be possible to conduct a SIA during every phase, because the assessment would form part of the EIA, which is conducted before the commencement of the activity. Thus, although the actual social impact evaluation will take place during the planning phase of the development, anticipated impacts for the construction and operation phases should be identified, because these two phases are the phases during which most social impacts will occur and where social impacts can be best identified and measured. The closure of residential developments is usually not foreseen and therefore this phase is not included.

The greatest social impact of many projects is often the stress that results from the uncertainty associated with it. This is especially the case with projects planned for community benefit. Therefore, as Burdge and Vanclay (1996:59) noted: “SIA as a process and methodology has the potential to contribute greatly to the planning process”.

6.2 Inclusion of framework during the EIA process

It is suggested that this framework be applied in the following stages of the EIA process and as part of the following documents for the Basic Assessment and comprehensive EIA processes respectively.

- Basic Assessment: Basic Assessment Report (in which environmental impacts and mitigation measures are also contained).
- Comprehensive EIA: EIA Report (in which environmental impacts and mitigation measures are also contained), and not the Scoping Report (in which impacts are merely identified, without an impact assessment and mitigation measures).

6.3 Framework templates

The templates on the CD included in the front of this document can be used and included, in the same format, in the applicable reports for conducting the SIA segment of the EIA. The electronic copy illustrates best how scores are calculated based on ratings awarded to impacts and the templates can be copied and pasted in the applicable report. The weights, rating keys and values attached to each impact stay the same for all developments, with only the actual rating differing according to the specific development and impact.

6.4 Steps to be followed

The following steps should be followed when completing the SIA section of an EIA using the framework.

Step 1: Complete the *Anticipated impacts, mitigation and rating table* with explanations of anticipated impacts and mitigation measures. Assign a rating to each of the variables, keeping the evaluation factors listed in 5.2 in mind. Rating is from -2 to 2, according to the scale described in Table 6.

Step 2: Complete the rating column (highlighted) on the spreadsheet for all variables, as assigned in the *Anticipated impacts, mitigation and rating table*. Both the value and score are automatically calculated with the use of formulae set up in the spreadsheet. The total score on which the recommendations will be based will appear at the bottom of the spreadsheet.

Step 3: Based on the final score calculated, complete the section at the bottom of the *Anticipated impacts, mitigation and rating table* with recommendations of the practitioner.

6.5 Benefits of the framework

The above framework does not address all the social impacts of developments the same way that a comprehensive SIA (carried out in addition to the Basic Assessment or comprehensive EIA) would, due to the complexity of social impacts. It is also by no means the intention that a separate SIA, when required, be replaced by this framework.

The framework would, however, have the following benefits:

1) Much more information of the potential social impacts of a proposed development would be supplied to the decision-making authority than is currently the case and that was the case when the two applications in the case studies below, were submitted;
2) A final score in percentage (in the case studies below 58% and 64% respectively) would be calculated, which would serve as an indication of whether the proposed development should be approved or not, *from a social point of view*; and
3) Mitigation measures to enhance positive social impacts or lessen negative impacts are suggested. These mitigation measures can be stipulated as a condition if environmental authorisation is granted by the authority.

The framework is thus more comprehensive than current information required in the EIA process, and can easily be used in conjunction with current formats prescribed for EIAs.

7. Application for Residential Developments – Case Studies

In order to demonstrate the application of the proposed SIA segment of the EIA, based on the included templates, the framework was applied to two conventional Basic Assessment applications that were completed (without the framework) by the EAP and submitted to the applicable authorities for evaluation. No separate, comprehensive SIA was done for either of the applications and for both applications environmental authorisation was granted.

The applications were for proposed projects in the Western Cape and Mpumalanga provinces respectively. On the front pages of the template for Basic Assessment Reports it is stated that all information in the report will become public information on receipt by the competent authority, in these cases, the Western Cape Department of Environmental Affairs and Development Planning and the Mpumalanga Department of Agriculture and Land Administration. Since in both cases the reports have been submitted (and subsequently authorisation granted) the contents of the documents were treated as public information and therefore it was not deemed necessary to obtain permission from the EAPs to use the Basic Assessment Reports in the case studies to be presented. Applications in two different provinces were used as case studies, in order to illustrate that the process and report templates, and therefore the information required, are similar in the different provinces. Basic Assessment processes, and not comprehensive EIA processes, were used because separate SIAs are more often conducted as part of a comprehensive EIA process than in a Basic Assessment process.

7.1 Residential development on Portion 53 of Farm 794, Stellenbosch, Western Cape

The application was for a proposed residential development in Somerset West in the Western Cape. The development would comprise a total of 1 440 units, which would include 320 retirement units. The site is 16.69 hectares in extent and it is deducted that it would cater for residents belonging to the medium-high income group, since the development would also include social facilities such as a clubhouse, gym, braai facilities, swimming pools, day care facility and tennis and squash courts. The site is located within the Cape Town Metropolitan Area urban edge and is characterised by degraded land (veldt dominated by alien species) and a sports field (De Beers Amateur Football Club, which will be relocated to another site), surrounded by similar residential developments as the proposed development, as well as retail and office space and a golf course. There are wetlands present on the site, some of which are disturbed and have low conservation value, and will as a result not be preserved, and one extensive wetland that will be preserved and utilised as open space.

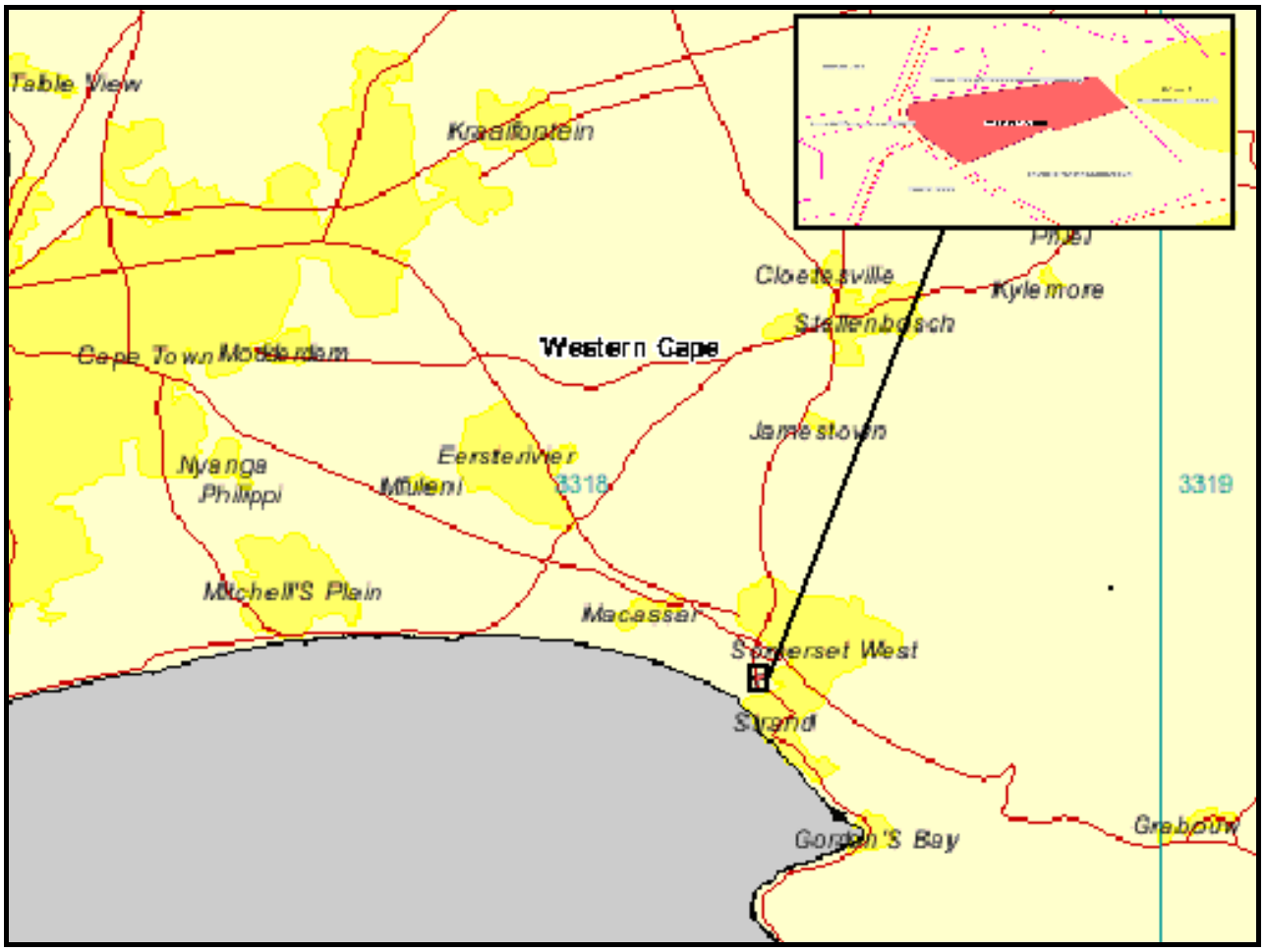

Figure 1: Locality of residential development on Portion 53 of Farm 794, Stellenbosch, Western Cape

In the Basic Assessment Report that was submitted to the Western Cape Department of Environmental Affairs and Development Planning the following information relating to the social environment and social impacts were included.

- Mention is made very briefly of the following socio-economic factors prevalent in the area: main economic and commercial activities, employment, housing, crime levels and land uses.
- The findings of a Heritage Impact Assessment that was carried out. No building or structure on site was regarded as conservation worthy although there is a building or structure older than 60 years on the site and a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999) is required. The football club's legacy with the grounds will be acknowledged and a small memorial feature listing all those who had their ashes scattered on the fields will be erected.

- Much emphasis was placed on minimising visual impacts, such as including green open space between building clusters, planting trees in parking areas and identifying “no build zones”, which will be landscaped, on the western and southern property boundaries.
- The following impacts that could have a direct effect on the social environment were assessed: water quality, heritage impacts, dust, visual impacts, lighting (for safety and security purposes) and noise pollution. However, the assessment of these impacts and proposed mitigation measures do not sufficiently address possible impacts the development could have on the social environment.

Social benefits listed in the report included the following.

- Creation of approximately 422 temporary jobs during construction, of which approximately 80% would accrue to previously disadvantaged individuals.
- Creation of approximately 1 217 permanent jobs (security, cleaning, gardening services) during operation, of which approximately 50% would accrue to previously disadvantaged individuals.
- Provision of housing in the area.
- Contribution to upgrading of infrastructure in the area.

None of the above information would be omitted from the report, but the template tables would be added to the abovementioned Basic Assessment Report and completed by the EAP. Additional SIA related information than what was contained in the Basic Assessment Report (and listed above) would be obtained in order to complete the framework and thus add more value to the application. Tables 8 and 9 below illustrate what the framework would look like *after* it has been completed by the EAP.

Table 8: Anticipated impacts, mitigation and rating table for the residential development on Portion 53 of Farm 794, Stellenbosch, once completed by an EAP

Impact categories and variables	Explanation of anticipated impacts	Mitigation measures	Rating after mitigation
1. Employment: Construction			
Temporary employment opportunities created	422 temporary jobs will be created for a period of approximately 8 months.	Labour intensive methods should be used as far as possible and local labour should be recruited.	2
Temporary employment opportunities benefiting previously disadvantaged persons	Approximately 338 of the temporary jobs created will benefit previously disadvantaged persons.	Previously disadvantaged individuals should be employed whenever possible.	2
Transfer of skills	"On-the-job" training is expected for a percentage of labourers. This may include training in trades such as brick-laying, tiling, welding, etc.	A transfer of skills should be attempted as far as possible.	1
2. Employment: Operation			
Permanent employment opportunities created	Approximately 1 217 permanent employment opportunities will be created for garden and building maintenance, maintenance of the social facilities (squash and tennis courts and swimming pools), cleaning and security. Other permanent opportunities would be for the running of the social facilities, such as the gym and day care centre, The appointment of additional municipal workers, to remove refuse and to read and maintain water and electricity delivery, may be needed. It is hoped that wealthier residents would provide employment to the local labour force of which a large percentage is unemployed. It is hoped that wealthier residents would provide employment to the nearby labour force that would otherwise be unemployed.	Local labour should be recruited as far as possible and employment for these positions should be permanent.	2
Permanent employment opportunities benefiting previously disadvantaged persons	Approximately 609 of the permanent employment opportunities created will benefit previously disadvantaged persons.	Previously disadvantaged individuals should be employed whenever possible and employment for these positions should be permanent.	1
Transfer of skills	There are no specific plans at this stage to ensure skills transfers.		0
Other opportunities for income generation	There will probably be no opportunities for additional income generation by the residents.		0

3. Service delivery and accessibility			
Access to refuse removal, water, sewage / sanitation, electricity	This will form part of the development and it is not anticipated that this development will provide access to these services to residents that previously did not have access to services, since this development will cater for the medium-high income group.	Service infrastructure should be of good quality, must always be in a good working condition and must be subject to routine maintenance at regular intervals.	0
Access to education, health services, transport, recreation, other community services	There will probably not be an increase in access to facilities and services to residents who did not have access to these previously, since this development will cater for the medium-high income group. Residents will have easy access to facilities for sport (gym, swimming pool, tennis and squash courts) and day care for children on the same premises as their houses.		0
Safety and security	Whether there will be an improvement in safety and security will depend on the current areas of residence of future residents. Since the planned development will cater for people belonging to the medium-high income group, there might not be a significant increase in safety and security from current baseline conditions of future residents.	Organized community involvement structures for the whole area, such as community policing forums or neighbourhood watches, will contribute to a safer environment.	1
Emergency preparedness (e.g. fire, floods)	No specific plans are in place at this stage to ensure emergency preparedness.	There should be mechanisms in place to ensure preparedness in emergencies such as floods or fires.	0
Local authority administration	It is hoped that there will be a spirit of good governance prevalent where service delivery and community involvement is concerned.	Residents should be involved through their elected ward councillor. The local authority should be held accountable for all issues under their jurisdiction.	0
Degree of community involvement, representation, investment, empowerment	Participation in forums that address issues affecting residents will lead to a safer and more functional community, and lead to feelings of empowerment for residents.	Residents should be encouraged to be involved in all issues affecting them.	1
4. Sense of community and identity			
Residential stability, displacement, relocation	This development will comprise formal housing and		0

	will be located on land that is currently vacant and not used for residential purposes. There would thus be no risk of forced residential relocations.		
Promotion of integration and equity	There is a low cost housing development across the road from this development site and as such integration will be promoted to some extent. Integration will be less than would have been the case should this development have catered for low, medium and high income groups.		1
Reactions to the development – attitudes, stress (based on PP process followed)	Comments from Interested and Affected Parties mainly revolved around the loss of open space as a direct result of the development, a change in the character of the area and aesthetic considerations. Traffic congestion was also raised as a concern and a request to address the necessary ecological issues was put forward. The chairman of the De Beers Amateur Football Club, which will be relocated to make space for the residential development, stated that he supports the development on condition that the club will be relocated to a venue with similar facilities at the landowners' cost.	Open space must be kept as specified in the Basic Assessment Report. Open space and buildings should be well maintained at all times so as to minimise negative visual impacts the development may have on the area. Building plans and specifications should be approved by the municipality prior to construction and should be in line with the character of other developments in the area as far as possible. The football club should be relocated to a site that is acceptable to both the club and landowners, as per the terms agreed upon by the parties.	-1
Preservation of culturally and historically significant elements	No building or structure on site was regarded as conservation worthy.	If culturally or historically significant elements are discovered on the site during construction, construction activities should immediately halt and the South African Heritage Resources Agency should be notified.	0
5. Characteristics of development and environment			
Traffic impacts	There will be an increase in traffic volumes in the area.	Signage and road markings should be kept in a good conditions and be visible at all times. Law enforcement should also be a priority.	-2
Noise	No significant increases in noise levels that will be detrimental are expected.		0
Air quality	No significant increases in air pollution levels that will be detrimental are expected.		0
Aesthetic considerations	The development will lead to a significant reduction	Lamp posts and directional lighting should be used	-1

	of open space, although the site presently does not consist of natural vegetation cover and has low conservation value.	so as not to disturb residents at night. Trees should be planted and maintained. Open space must be kept as specified in the Basic Assessment Report. Open space and buildings should be well maintained at all times so as to minimise negative visual impacts the development may have on the area. Building plans and specifications should be approved by the municipality prior to construction and should be in line with the character of other developments in the area as far as possible.	
Recommendations of practitioner: The final score for social impacts with regards to this development is 58% (see table below). Based on this the development will have a moderately positive social impact and can go ahead. Mitigation measures should be implemented and adhered to. Particular attention should be paid to issues relating to access to services and service delivery, creation of employment opportunities and the transfer of skills. This development will lead to the creation of a number of employment opportunities in the operation phase as well, unlike most other residential developments, and this represents one of the biggest benefits of this development. It is important to note that actual impacts and ratings might change as the project develops, since anticipated outcomes might prove to be different from actual outcomes. It is therefore recommended that outcomes be monitored during every phase of the project, so that actions can be adjusted accordingly, where necessary.			

Table 9: Framework, as it would be once completed by an EAP, for the residential development on Portion 53 of Farm 794, Stellenbosch

After completion the EAP would typically have made the following recommendation, based on the final score: The final score for social impacts with regards to this development is 58%. Based on this the development will have a moderately positive social impact and can go ahead. Mitigation measures should be implemented and adhered to. Particular attention should be paid to issues relating to access to services and service delivery, creation of employment opportunities and the transfer of skills. This development will lead to the creation of a number of employment opportunities in the operation phase as well, unlike most other residential developments, and this represents one of the biggest benefits of this development. It is important to note that actual impacts and ratings might change as the project develops, since anticipated outcomes might prove to be different from actual outcomes. It is therefore recommended that outcomes be monitored during every phase of the project, so that actions can be adjusted accordingly, where necessary.

This recommendation would differ from the one made by the EAP in the Basic Assessment Report that was submitted, in that a separate recommendation will be made based on anticipated social impacts of the development, instead of making a broad (rather than precise) recommendation based on all findings (including the findings of the environmental component of the EIA).

The framework will also give the EAP the opportunity to suggest mitigation measures to both soften negative impacts and enhance positive impacts, as opposed to merely listing a few issues relating to the social environment.

As this framework was not included in the application, the following information relating to the social environment was either not included at all, or mentioned briefly without sufficient detail, explanation and suggested mitigation measures: opportunities for the transfer of skills, access to services and amenities, safety and security, emergency preparedness, community involvement and representation, residential stability, promotion of integration and equity, reactions towards the development and traffic impacts.

7.2 Residential development on a portion of Portion 4 of the farm Goedgedacht 228 IR, Delmas, Mpumalanga

The application was for a proposed residential development in Mpumalanga, aimed at providing formal housing structures to the farm labourers currently residing on the property. The layout made provision for 50 residential stands, each measuring approximately 550m². The Mpumalanga

Provincial Government was in the process of buying this farm portion from its owner for the purpose of constructing the housing units for the benefit of the farm labourers. Beneficiaries would be assisted in the form of housing subsidies. The site is characterised by previously cultivated land and informal housing structures.

In the Basic Assessment Report that was submitted to the Mpumalanga Department of Agriculture and Land Administration the following information relating to social impacts were included.

- 50 farm labourers would benefit from the granting of housing subsidies and the housing development.
- No building or structure older than 60 years would be affected by the development and no permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999) is required.
- Temporary jobs would be created during the construction phase.
- The following impacts that could have an effect on the social environment were assessed: surface and ground water quality, air pollution, noise and crime, safety and security. However, the assessment of these impacts and proposed mitigation measures do not sufficiently address possible impacts the development could have on the social environment and the focus was almost entirely on how it could affect the natural environment.

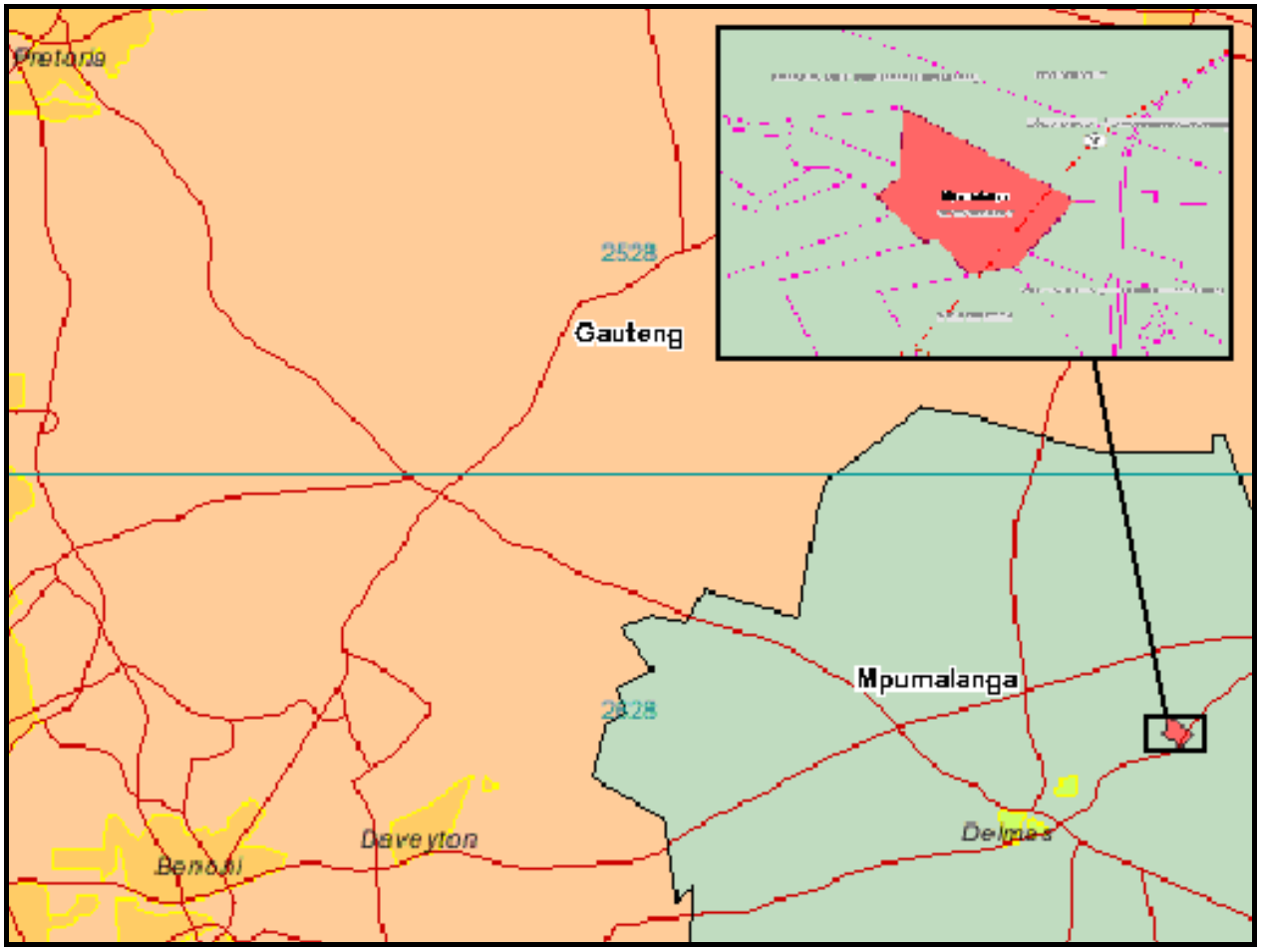

Figure 2: Locality of residential development on a portion of Portion 4 of the farm Goedgedacht 228 IR, Delmas, Mpumalanga

The template tables would be added to the abovementioned Basic Assessment Report and completed by the EAP. Once again, additional SIA related information than that listed above would be obtained and included in the content of the framework. Tables 10 and 11 below illustrate what the framework would look like *after* it has been completed by the EAP.

Table 10: Anticipated impacts, mitigation and rating table for the residential development on a portion of Portion 4 of the farm Goedgedacht 228 IR, Delmas once completed by an EAP

Impact categories and variables	Explanation of anticipated impacts	Mitigation measures	Rating after mitigation
1. Employment: Construction			
Temporary employment opportunities created	A number of temporary employment opportunities will be created for the construction of houses and infrastructure.	Labour intensive methods should be used as far as possible and local labour should be recruited.	2
Temporary employment opportunities benefiting previously disadvantaged persons	For the construction of houses and infrastructure.	Previously disadvantaged individuals should be employed whenever possible.	2
Transfer of skills	"On-the-job" training is expected for a percentage of labourers.	The transfer of skills should be attempted as far as possible.	1
2. Employment: Operation			
Permanent employment opportunities created	No permanent employment opportunities will be created during operation, as this development will provide housing for farm labourers already residing on the site.		0
Permanent employment opportunities benefiting previously disadvantaged persons	No employment opportunities will be created as a result of this development.		0
Transfer of skills	No transfer of skills will take place during the operation phase as a result of this development.		0
Other opportunities for income generation	It is not foreseen that other opportunities for income generation will be present as a result of this development.		0
3. Service delivery and accessibility			
Access to refuse removal, water, sewage / sanitation, electricity	Residents had no access to these services previously and will now have access to it as a direct result of the development. Access to services will ensure improved health, quality of life and environmental conditions.	Service infrastructure should be of good quality, must always be in a good working condition and must be subject to routine maintenance at regular intervals.	2

Access to education, health services, transport, recreation, other community services	Access to education, health services, transport, recreation and other communities will not increase as a result of this development.		0
Safety and security	No provision is made for measures to specifically improve safety and security. Formal housing structures, as opposed to informal structures, can protect inhabitants from unwanted access to the house and weather conditions such as rain and storms.	Housing structures should be of good quality to withstand natural elements.	1
Emergency preparedness (e.g. fire, floods)	No specific plans are in place at this stage to ensure emergency preparedness.	There should be mechanisms in place to ensure preparedness in emergencies such as floods or fires.	1
Local authority administration	It is hoped that there will be a spirit of good governance prevalent where service delivery and community involvement is concerned.	The local authority and developer should be held accountable for all issues under their jurisdiction.	0
Degree of community involvement, representation, investment, empowerment	Provision of formal housing and access to services will lead to feelings of empowerment for residents.	A representative should be appointed to receive and communicate issues of concern and problems to the developer and applicable authorities.	2
4. Sense of community and identity			
Residential stability, displacement, relocation	No residents will have to be relocated or displaced since the labourers residing on the site will benefit from the housing development.		0
Promotion of integration and equity	The provision of housing to the labourers will improve equity, for no labourers will be housed in informal structures after the construction of the houses.		2
Reactions to the development – attitudes, stress (based on PP process followed)	No objections to the development were received and Eskom and Sasol indicated that their infrastructure would not be negatively affected.		0
Preservation of culturally and historically	No culturally and historically significant elements	If culturally or historically significant elements are	0

significant elements	are present on the site.	discovered on the site during construction, construction activities should immediately halt and the South African Heritage Resources Agency should be notified.	
5. Characteristics of development and environment			
Traffic impacts	There will be no increase in traffic volumes in the area because the future inhabitants of the houses are already residing on the site.		0
Noise	No significant increases in noise levels that will be detrimental are expected.		0
Air quality	Air quality will improve due to better housing conditions resulting in a decrease in the need to make use of open fires for heating and cooking.	Temperature regulating building materials should be used where possible and heating and cooking instruments should be durable and safe.	2
Aesthetic considerations	The development will have a positive impact on aesthetics of the site, since the informal settlement will be replaced by formal housing.	Lamp posts and directional lighting, if any, should be used so as not to disturb residents at night. Trees should be planted and maintained. Buildings and infrastructure should be well maintained.	2
Recommendations of practitioner: The final score for social impacts with regards to this development is 64% (see table below). Based on this the development will have a moderately positive social impact and can go ahead. Mitigation measures should be implemented and adhered to. The biggest benefit of this development is the fact that residents will receive formal housing, no longer have to live in informal housing structures and as a result will have access to services, which were previously not the case. Therefore, an important factor to consider is the quality of the building materials and buildings to be constructed, as well as the quality of service infrastructure, so that these benefits do not fade after some time. It is important to note that actual impacts and ratings might change as the project develops, since anticipated outcomes might prove to be different from actual outcomes. It is therefore recommended that outcomes be monitored during every phase of the project, so that actions can be adjusted accordingly, where necessary.			

Table 11: Framework as it would be once completed by an EAP, for the residential development on a portion of Portion 4 of the farm Goedgedacht 228 IR, Delmas

After completion the EAP would typically have made the following recommendation, based on the final score: The final score for social impacts with regards to this development is 64%. Based on this the development will have a moderately positive social impact and can go ahead. Mitigation measures should be implemented and adhered to. The biggest benefit of this development is the fact that residents will receive formal housing, no longer have to live in informal housing structures and as a result will have access to services, which were previously not the case. Therefore, an important factor to consider is the quality of the building materials and buildings to be constructed, as well as the quality of service infrastructure, so that these benefits do not fade after some time. It is important to note that actual impacts and ratings might change as the project develops, since anticipated outcomes might prove to be different from actual outcomes. It is therefore recommended that outcomes be monitored during every phase of the project, so that actions can be adjusted accordingly, where necessary.

This recommendation would, once again, differ from the one made by the EAP in the Basic Assessment Report that was submitted, in that a separate recommendation will be made based on anticipated social impacts of the development, instead of making a broad (and often vague) recommendation based on all findings (including the findings of the environmental component of the EIA). The framework will also give the EAP the opportunity to suggest mitigation measures to both soften negative impacts and enhance positive impacts, as opposed to merely listing a few issues relating to the social environment.

As this framework was not included in the application, the following information relating to the social environment was in this case study either not included at all, or mentioned briefly without sufficient detail, explanation and suggested mitigation measures: access to services and amenities, safety and security, emergency preparedness, empowerment, promotion of integration and equity, and reactions towards the development.

8. Value of the framework

As both the applications that were used as case studies were authorised and the results of the calculations of the framework also resulted in a recommendation that the applications be authorised, the application of the framework would, in these cases, not have influenced the authorities to make a different decision than the one that was made by the authorities.

The recommendations would, however, have differed from the ones made by the EAPs in the Basic Assessment Reports that were submitted, in that a separate recommendation would have been made based on anticipated social impacts of the development, instead of making a broad recommendation based on all findings (including the findings of the environmental component of the EIA). In addition to this, more information related to the social environment would have been included in the application, than was the case in the applications that were actually submitted to the authorities.

The framework would also have given the EAP the opportunity to suggest mitigation measures specifically for social impacts, as opposed to merely listing a few issues relating to the social environment. Therefore, the greatest value of the framework is twofold: (1) enhancement of the decision-making process by potentially resulting in a different, better informed decision than the one that would otherwise have been made, and (2) the provision of mitigation measures for social impacts, which would typically be included as conditions for issuing authorisation, and thereby ultimately enforced.

9. Conclusion

The need for a user friendly framework that can assist in completing the SIA sections of EIAs in South Africa was identified, due to the fact that sufficient information is not required currently and that these sections are usually completed by practitioners that don't have the preferred background to assess social impacts. It is the ideal that EIAs and SIAs carry equal weight under the law. In addition, more issues related to social impacts need to be considered. This will make the assessment more comprehensive than is currently the case, without having to conduct a separate SIA for each development.

A basic framework to quantify social impacts in the context of EIAs was developed, specifically focusing on planned residential developments. Most methodologies are developed specifically for certain fields or industry, thereby increasing accuracy. Four main categories of impacts were identified namely employment, service delivery and accessibility, sense of community and identity, and characteristics of the development and the environment. Variables under these four main categories are measured against baseline conditions and before impacts have been mitigated. While rating each variable under these four main categories, the following needs to be kept in mind: the size and character of the development, the duration of impacts, the likelihood of impacts occurring, how many people will likely be affected and the importance of the impact.

It is strongly recommended that mitigation measures be identified and motivation for awarding ratings be discussed as part of the process – this will be descriptive in nature and give a clearer picture of the social environment to be dealt with. Mitigation measures will lessen negative impacts, while it can also serve to enhance positive impacts of a development. It is crucial that the implementation of proposed mitigation measures be monitored on an ongoing basis throughout the different phases of the project to ensure that recommendations are enforced.

Although the assessment takes place in the planning phase of a development (because it forms part of an EIA), impacts that will likely occur during the construction and operation phases are rated, because it is during these phases that most impacts will occur.

Becker (1997:1) writes: "… it is my belief that each problem presented to a social impact assessor requires an approach that combines well-known procedures with new trial-and-error approaches. For this reason I doubt very much whether a standardized overall methodology for this type of policy-oriented social research will ever appear".

The proposed framework is certainly not perfect and it is expected and hoped that it will improve through public discourse. It was demonstrated, though, to be useful as part of the EIA process during the planning phase of residential developments, in the sense that it supplies more information than is currently the case, it awards a final score (in percentage) on which recommendations should be based, and it is user-friendly and simple enough for people without a social sciences background to complete it.

Although the intention is by no means that the framework should replace separate comprehensive SIAs in cases where an SIA is needed it is advised that the different provincial authorities ultimately incorporate this framework, or an improved version created through dialogue between the public and stakeholders, and incorporate it into processes required for EIAs for planned residential developments. On this basis similar frameworks can be developed for all other types of developments as well, and not only residential developments, so that it can be used in all EIA processes, regardless of the type of development that is planned.

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