2 Social Infrastructure projects and sustainability

2.1 Defining Social Infrastructure

Social infrastructure is critical to the development of sustainable communities. While the provision of housing, potable water and electricity are vital for meeting basic human needs, other services such as schools, transport and health care are important for ensuring the long-term satisfaction of residents. In combination, these infrastructure types create the framework within which residents can establish a locality-based community with opportunities for social and economic well-being. This in turn creates the foundation for a sustainable community.

The draft Infrastructure Development Bill defines infrastructure as "*installations, structures, facilities, systems, services, or processes*" which relate to various technical structures such as airports, ports and harbours, mines, power stations, industrial facilities, education institutions, health care services, roads and human settlements. However, it is important to differentiate between economic and social infrastructure. Economic infrastructure is defined as "*that part of an economy's capital stock that produces services to facilitate economic production (e.g. electricity, roads and ports) or serves as inputs to production or is consumed by households (water, sanitation and electricity)*" (DBSA, 2006). In contrast, SI usually refers to "*services such as health, education and recreation that have both a direct and an indirect impact on the quality of life*" (DBSA, 2006). For the purpose of this guideline, large economic infrastructure such as airports, ports and harbours and mines have been excluded. Instead the guideline has focused on small human settlements and associated services and facilities. As such, a combination of the above definitions of economic and social infrastructure has been used in reference to the term social infrastructure used in this guideline. The following definition applies:

"Social infrastructure is that which is developed at a household or community scale, is intended for the delivery of basic services and which has a direct and/or indirect impact on the quality of life"

A distinction can also be made between urban and rural SI. The range of economic and social processes as well as government's priorities, options and policies vary between these two contexts. SI developments are more likely to take place on land owned or held in trust by the state and as such may be more relevant to the urban and tribal areas as opposed to true rural environments. This spatial context is important when considering the likely impacts of the proposed development. For example, the construction of a power line in a rural setting is more likely to impact negatively on birds with high conservation value compared to the same development in an urban context. In contrast, the social impacts of this development in an urban area may be greater with the possible relocation of people to accommodate the new lines and potential health risk to people living under the lines.

Irrespective of this spatial context, there is need for a coherent planning approach and implementation of SI in both rural and urban settings. Consequently, the guideline is arranged into ten SI types which are applicable to both contexts. These infrastructure types are generally regarded as basic municipal services (DPLG, 2007) which facilitate social development and form the backbone of a community. They include:

- Housing
- Water supply
- Sanitation
- Electricity
- Refuse and waste disposal
- Roads and transport
- Health infrastructure
- Sports facilities
- Schools
- Welfare infrastructure

2.2 Strategic issues which impact SI projects

Historically, government expenditure has focussed on economic infrastructure rather than on SI, with the aim of generating employment. Experience shows that this was a misguided approach and that failure to concentrate on SI kept large portions of the population below the minimum living level and reduced their capacity to effectively participate in and contribute to economic growth. The failure of various infrastructure programmes to generate economic growth at the projected rates means that SI backlogs remain high today, to the point where they are the basis for on-going service delivery protests across the country.

In addition to the skewed focus on economic infrastructure, the delivery of SI has been hampered by a wide range of issues including corruption, political interference and lack of capacity in terms of funding, skills and human resources. Although, these issues have serious implications for the implementation and sustainability of SI projects, the measures required to address them are complex and beyond the ambit of this Guideline.

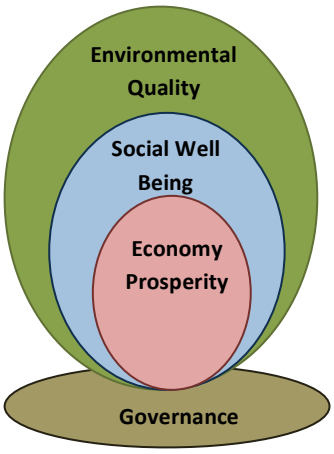
2.3 What is sustainability and what role does EIA play in achieving it?

Ecosystems provide a range of benefits or services to society such as air, water and food. These services are essential for human livelihoods and well-being. Despite the importance of these services, their supply is being compromised by the continuous degradation of our ecosystems. Government has highlighted the need to improve the provision of basic services and address the inequities of the past but stipulates that this needs to be done in a sustainable way. This requires that a balance is sought between development and the protection of our ecosystems and the services they deliver. The concept of sustainable development encompasses this thinking and provides an approach to development whereby resource use aims to meet human needs while simultaneously ensuring the sustainability of natural systems.

NEMA defines sustainable development as "*the integration of social, economic and environmental factors into planning, implementation and decision-making so as to ensure that development serves present and future generations*". Social, economic and biophysical factors can be broadly defined as follows:

- ***Social***. This refers to human systems and be defined at various levels including individual, household, community or other groupings (e.g. cultural or religious).
- ***Economic.*** These systems can take various forms and include different sectors (e.g. mining, agriculture, tourism, and manufacturing) at different scales ranging from large multinational companies to subsistence activities. Economic systems can be further categorised into formal and informal systems. Formal systems are represented by organised institutions with members and activities governed by policy and rules. Informal systems although they can be highly organised, operate through unstructured rules and processes.
- ***Biophysical.*** This refers to natural systems that comprise our natural capital or biodiversity. These include aquatic ecosystems (e.g. rivers, lakes and wetlands), terrestrial ecosystems (e.g. grasslands, forests and agriculture), and marine and coastal resources (e.g. beaches and estuaries).

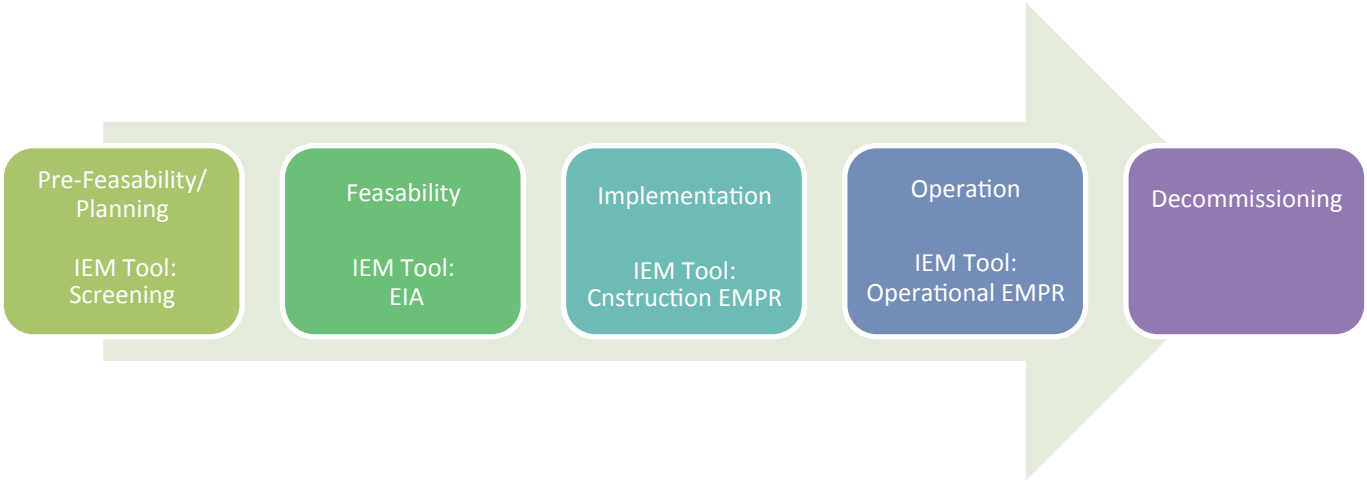
These three elements are generally regarded as the three pillars of sustainability and are not mutually exclusive but rather mutually reinforcing. For example, a healthy environment (environmental quality) is necessary for social well-being, which is a prerequisite for economic prosperity. An example of this in practice may be a tourism activity (economic system) which depends on the scenic beauty and tranquillity of a particular landscape (biophysical system). This tourism industry (formal economy) may in turn support local people selling crafts at the facility (informal economy). The natural system may also include a waterfall used for cultural or religious ceremonies (social/cultural value). The construction of a road or powerline through this area will therefore not only have a direct impact on the biophysical system, but will also have indirect consequences for the social, economic and cultural systems. Within the sustainability model, the economic, social and ecological systems are all integrated via the governance system, which holds all the other systems together through a legitimate regulatory framework.



Sustainable development can be achieved through the application of Integrated Environmental Management (IEM). IEM is a philosophy and set of principles (e.g. precautionary approach, polluter pays) supported by a range of environmental assessment and management tools aimed at promoting sustainable development. IEM provides a systematic approach for ensuring the inclusion of environmental considerations in decision-making at all stages of the activity life cycle (e.g. planning, feasibility, implementation/construction, operation or decommissioning). The aim of IEM is not to impede development but rather to provide a "way of thinking" and set of tools which can be used to improve a proposal or identify more environmentally acceptable ways of meeting the need and purpose of a proposal. IEM is therefore defined as "*a holistic framework that can be embraced by all sectors of society for the assessment and management of environmental aspects and impacts associated with an activity for each stage of the activity life cycle, taking into consideration a broad definition of environment and with the overall aim of promoting sustainable development*"[18]. In order to uphold the IEM principles and achieve sustainable development, the user should carefully select and combine a suite of tools. The choice of tools should be informed by the needs of the stakeholders and decision-makers, the hierarchy at which the activity is being undertaken (e.g. at a project level or strategic level) and the stage in the activity life cycle.

EIA is an important tool within the IEM toolbox. The purpose of an EIA is to provide decision-makers with sufficient information of the ensuing environmental impacts when deciding whether a project may proceed or not. EIA can be defined as "the process of collecting, organising, analysing, interpreting and communicating information that is relevant to the consideration of that application". It provides a structured way of identifying and evaluating the likely environmental consequences of a proposed development. After predicting the likely environmental impacts, an EIA identifies alternative site or design measures to minimise these impacts and outlines ways to improve the environmental performance of a project.

One of the major factors limiting the effectiveness of and positive contribution that EIA can make, is that issues of sustainability are only considered during an EIA, which usually commences once the planning phase has already been completed. This stems largely from EIA being the tool legislated in South Africa to assess development projects, and consequently developers traditionally only start considering the environmental impacts when they are legally bound to do so. However, in order to achieve sustainability it is necessary to combine a suite of IEM tools throughout all phases of the activity life cycle. In particular, the level of attention afforded to environmental aspects during the early stages of a project should be increased to ensure that the project approach is sustainable from the outset. So while this guideline focuses on the EIA process which is applied during the feasibility stage, some guidance is provided on how environmental aspects should be considered in other stages of the activity life cycle and what tools may be appropriate to do this. Only selected tools have however been discussed and further consideration should be given to the use of additional IEM tools. Effective application of these tools will improve the sustainability of SI projects.



[17] DEAT (2004) Overview of Integrated Environmental Management, Integrated Environmental Management, Information Series 0, Department of Environmental Affairs and Tourism (DEAT), Pretoria.