# Practical implementation of environmental legislation in a first/third world country

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#### Abstract

South Africa is a developing country with environmental constraints emanating from both its first and third world sectors. In order to address environmental impacts on the environment effectively, some form of legislative requirements must be met. Normally this can be achieved through the enforcement of adequate environmental legislation, and/or the use of voluntary approaches through working relationships between governments and industries. In South Africa, environmental legislation comparable to the best in the world has been in existence for a very long time. However, the country's inability to enforce current environmental legislation effectively (mostly through a lack of government capacity), results in detrimental impacts on the environment. The situation is exacerbated through the role played by the third world sector in areas where suitable enforcement of legislation may lead to additional unemployment to accommodate additional expenditures from industries having to meet (more) stringent environmental requirements. This scenario is not unlike in many African and other developing countries. This paper gives a brief outline of existing and anticipated environmental legislation in South Africa, dealing specifically with environmental impact assessments (EIAs). The actual enforcement and implementation of environmental legislative requirements in practice are addressed through typical examples from industry in the country. Finally, suitable legislative implementation and enforcement options are suggested and practical examples used to illustrate effective implementation of environmental programmes.

Keywords: legislation, environment, EIA

Conference topic: Environmental law, policies and institutions

### 1. INTRODUCTION

South Africa is a country rich in diversity and extremes. This is aptly illustrated by the United Nations Development Programme's composite index termed the Human Development Index (May *et al.*, 2000). The index is a composite of three factors, namely (Harris and Codur, 1998):

- longevity (as measured by life expectancy at birth),
- educational attainment (as measured by a combination of adult literacy and enrolment rates), and
- standard of living (as measured by real gross domestic product per capita).

Based on these factors the Human Development Index (HDI) indicates the relevant position of a country on an HDI scale between 0 and 1 (May *et al.*, 2000). Countries with an HDI below 0,5 are considered to have a low level of human development, those with an HDI between 0,5 and 0,8 a medium level, and those of 0,8 and above a high level of human development (May *et al.*, 2000).

In Table 1 the HDI for South Africa, its nine provinces and four racial groups are presented in relation to selected countries (data from May *et al.*, 2000). From Table 1 the disparities present in South Africa are clearly illustrated ranging from, for example, high human development (representative of first world standards) in the Western Province and Gauteng, to low human development (representative of third world countries) in the Limpopo Province.

With South Africa geographically situated at the southern tip of Africa, the country, together with the rest of Africa, falls into one of the third world developing regions of the world (Hardoy *et al.*, 1995; World Bank, 2001). South Africa consequently struggles with all the environmental constraints associated with a third world developing country, which include (Friend, 2003):

- a lack of education, both general and environmentally associated;
- informal settlements and associated problems with clean water, air pollution through the use of coal fired cooking and heating applications, effective sewage treatment and waste management; and
- insufficient resources, both human and financial, for the effective enforcement of environmental legislation.

The above situation is further exacerbated by the country's use of first world technologies whereby various waste streams, alien and additional to those emanating from third world countries, are produced that impact on land, air and water resources (Friend, 2001). Through its inability to enforce current environmental legislation, the absence of markets capable of absorbing the costs associated with environmentally acceptable products and the pressure placed on it from the third world sector, the country is faced with unique environmental challenges.

The objective of this paper is to address some of these challenges and to propose possible practical measures for the implementation of environmental legislation dealing with impact assessments and integrated environmental management procedures.

Selected countries	HDI rank	HDI	Province	Race
High human development		0,886*		
Canada	1	0,932		
		0,901		whites
Israel	19	0,900		
Singapore	43	0,836		indians
		0,826	Western Cape	
Venezuela	46	0,820		
		0,818	Gauteng	
Poland	49	0,815		
Mexico	52	0,804		
Medium human development		0,649*		
Thailand	54	0,798		
Malaysia	57	0,794		
Brazil	63	0,756		
		0,698	Northern Cape	
		0,694	Mpumalanga	
Paraguay	84	0,679		
South Africa	86	0,677		
Botswana	87	0,670		
		0,663		coloureds
		0,657	Free State	
China	94	0,644		
		0,602	Kwazulu Natal	
Egypt	110	0,551		
		0,543	North West	
Swaziland	117	0,513		
		0,507	Eastern Cape	
		0,500		africans
Low human development		0,355*		
Lesotho	120	0,476		
Zimbabwe	121	0,474		
		0,470	Northern Province	
Namibia	127	0,425		
Mozambique	159	0,252		
Guinea	173	0,191		

Table 1 Comparison of HDI for selected countries, race and province<sup>#</sup>.

# Data from May et al. (2000).

\* Representing the average of those countries falling within a particular category.

## 2. ADDRESSING ENVIRONMENTAL CHALLENGES

History has shown that industries and people generally tend to follow nature when it comes to environmental matters, that is, following the path of least resistance. In essence, if certain boundaries and regulations are not in place, pollution will continue unabated in most cases. In order to address the unique environmental challenges in South Africa, and basically in any country, three essential aspects should be in place, namely:

- suitable environmental legislation must exist,
- legislative requirements must be met and addressed by industry and the public, and
- enforcement of environmental legislation must take place in an organised professional manner.

#### 2.1 Environmental legislation in South Africa

South Africa, with its relatively new order, is one of the few countries in the world that addresses the environment in its constitution. Section 24 (part of Chapter 2 – Bill of Rights) of the Constitution of the Republic of South Africa states (SA Act, 1996):

Everyone has the right –

- (a) to an environment that is not harmful to their health or 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 and ecological degradation;
  - (ii) promote conservation; and
  - (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

This model constitution has led to new legislation and guideline documentation addressing the environment and its subdivided media (Friend, 2001). These include the National Environmental Management Act (NEMA, 1998), which introduced, *inter alia*, various principles aimed at the protection of the environment and the public; and the National Water Act (SA Act, 1998) dealing with the equitable access to the country's water resources. However, even before 1996 environmental legislation, comparable to the best in the world, was in existence. For example, the Air Pollution Prevention Act (APPA, 1965), which dates back to 1965 and stipulates the requirement for a permit to operate a scheduled process; and the Water Research Act (SA Act, 1971) that provided for the establishment of a Water Research Fund, deriving income from levies on water consumption.

Although fragmentation of environmental legislation still exists to a large extent, an issue of concern with regard to legislation in general in the country is the continual generation of new legislation; often with no regard for actual implementation/enforcement requirements. (Another concern is manifested in the example of the new Air Quality Bill being drafted to replace APPA of 1965. The impression is gained that people are more concerned with the actual date of this act than its implementation and/or enforcement. Although the act was promulgated in 1965, it stipulates that, *inter alia*, a permit should be obtained for the operation of a scheduled process and not what should be included within such a permit. The relevant authority responsible to issue a permit can thus still include current/first world standards within such a permit, actually quite a timeless and well written act.)

### 2.2 Meeting of legislative requirements

Although large parts of South Africa's population and environment exist under third world conditions, the majority of industries and companies can rightly claim to be part of the first world, if solely based on technological innovations and operation (Friend, 2001).

In the South African industry milieu, various pockets of excellence with regard to the environment do exist. However, this is more dependent on the persons employed in certain environmental positions, than on the relevant industry's self enforcement of good environmental management practice. (Friend, 2003)

The work done by these environmental practitioners is often negated by the failure of government to enforce local legislation on an active basis. When put in the position to substantiate needed plant alterations to conduct operations within the law, their proposals are frequently not accepted by management because either the penalties imposed on the company in the past were negligible, or the company's previous contraventions of the law went by undetected and/or unpunished (Friend, 2001). In general, South African industries:

- do not expend capital on improving environmental performance, save for the potential avoidance of costs related to rehabilitation and implications for reputational damage (Chamber of Mines, 2001);
- continue to attack legislation and basic environmental rights by implementing legal actions whenever legislative and environmental requirements are in disagreement with an industry's expansion programmes (Barnard, 1999; SAVE, 2001 and Lakhani, 2002);
- do not invest in environmental programmes that have no commercial returns (Winkler and Mavhungu, 2001); and
- believe there is little economic incentive to move beyond compliance with existing legislation, if that. This is because financial penalties imposed for transgression of environmental standards are pathetically inadequate for the nature of the offence (Petrie, 1992).

Since the opening up of international markets to the South African industry after the general elections in 1994, market forces impacting on international companies started to influence South African companies' decisions with regard to the environment. Industries in highly developed and first world countries must comply with strict government environmental legislation. This increases production costs of these industries. In an open market system, their products will not be able to match (in price) those produced in countries with very little, or ineffective, environmental legislation. These industries would therefore exert pressure on their respective governments to either (Friend, 1993):

- add excessive import duties to such products (obtained from countries with no or unenforced environmental legislation) to make their environmentally acceptable products more competitive, or
- altogether ban the import of such products, that is, impose environmental sanctions on such products and countries.

In addition, the South African industry is facing (in the international markets) a growing environmental awareness of consumers who condemn and refuse to buy goods produced under environmentally unacceptable standards (Friend, 1993). Industry in South Africa, in general, has therefore started to implement self regulated steps to bring their products in line with those of their overseas counterparts. However, the most significant impact on local industries with regard to the environment was the listing of a number of companies on international bourses. These companies are now faced with shareholders demanding first world environmental ethics and operations.

Although these events are all promising, the actual downstream implementation and effects on the South African environment need to be seen. Due to insufficient legislative control mechanisms unacceptable environmental practices continue in industry at present (Friend, 2003).

### 2.3 Enforcement of environmental legislation

In addition to fragmented environmental legislation, the lack of government capacity means that the enforcement of existing legislation is frequently unfocused (DEAT, 2000) and more often, non-existent (Friend, 2001).

This lack in government capacity stems from a number of causes. Friend (2001) states that there is a general shortage of qualified personnel in all departments involved in enforcing environmental legislation. The situation is worsened by insufficient funding to obtain the required personnel and equipment, and/or to provide adequate training to existing staff. (Being essentially part of a third world developing region, a large proportion of government spending is allocated to improving conditions of the poor through the provision of housing, clean water and electricity.)

This inability of government to enforce current legislation and assist in the promotion of effective environmental management is demonstrated by the following:

- the time period involved for the issue of permits or licences (for example, to either utilise water, discharge effluent or operate an industry that causes air pollution) is unacceptably long. This normally results in either the company technically operating illegally due to the long waiting period (if it was in operation already), or in certain instances a viable proposition is abandoned due to the long delay (Friend, 2001).
- due to the long delays in permitting and licencing of certain operations, government has often in the past issued temporary licences for mining operations before the legally required environmental management programmes have been completed. This then allowed those mines to continue with their mining preparations and construction phases (in some cases even with the mining operation itself).

This was also the case with the Save the Vaal Environment (SAVE) campaign during 1998/99 that was conducted by property owners on the banks of the Vaal river against Sasol's intended open cast strip mine astride the Rietspruit river and its wetland (Barnard, 1999 and SAVE, 2001). In a landmark ruling, however, the Supreme Court of Appeal ruled against Sasol and the relevant government authority in favour of the community-based organisation, thereby placing the environment at the forefront of all future mining projects and bringing South Africa in line with international practice (SAVE, 2001).

• the actual fining of companies that contravene present legislation is either not taking place, due to the inability of government to get people on the ground at the contravening sites, or it takes the form of inconsequential fines that allow certain companies to treat it as part of an operating expense, instead of investing in the necessary plant to prevent future contraventions (Friend, 2001).

Two other issues also impact on the degree of enforcement within the country, namely that of public watchdogs and the third world factor. In first world countries the public, because of high levels of education, can put pressure on companies for more environmentally acceptable products in the marketplace, as well as acting as a country's watchdog against environmentally unacceptable projects. However, for the majority of South Africans struggling with third world conditions, environmental awareness is a concept they are not fully accustomed to. The additional costs associated with greener products and the responsibility of watchdog for environmentally sustainable practices can not be borne by the public, the majority of whom are unable to afford the essential requirements for living and with little basic education. When people do not have housing and access to clean water, the saving of a wetland in another part of the country becomes arbitrary. (Friend, 2003)

The concept of the third world factor, in terms of legislative enforcement within the country, is best illustrated through using the example of interactions between first and third world conditions that took place at the Grootvlei mine. The mine, situated near Springs in the Gauteng province (De Beer, 1996) and typifying first world standards in being the deepest shaft on the basin, was given an ultimatum to address its effluent discharge to the Blesbokspruit wetlands (Nxumalo, 1997). The effluent pumped from the mine contained double the pollution levels (mainly iron) stipulated by its pumping permit and resulted in severe contamination of the wetland with subsequent death of aquatic and bird life (Feris, 1997). (The wetland was consequently blacklisted in May 1996 by the Montreux record, which lists wetlands of international importance that have been degraded, destroyed or damaged; Feris, 1997.)

When the mine's pumping permit was withdrawn by the relevant government department in 1996, the mine continued pumping until talks between all the stakeholders took place. The end result was that the mine was given another temporary permit during which time settling facilities had to be built by the mine (Bulger and De Beer, 1996). The government also made R 8,5 million (US\$ 1,3 million) available for the operating costs of the settling facilities at the mine (Bulger and De Beer, 1996).

All the above was done to safeguard 6500 jobs at the mine which would have been lost if the mine had been closed because of its pollution (Hadland, 1996). Only under third world conditions can a mine hold a government to ransom for fear of higher unemployment. Under first world conditions, the mine would have been closed and the workers left to find other work under more favourable economic (employment) conditions. (Friend, 2003)

# 3. PRESENT ENVIRONMENTAL IMPACT ASSESSMENT LEGISLATION

In South Africa the public and local communities are afforded the opportunity to provide input into new projects proposed by industry through legislated public participation (DEAT, 1998 and NEMA, 1998). The DEAT (1998) guideline document on environmental impact assessment (EIA) was issued with the aim of providing business and industry, non government organisations (NGOs), the public, labour organisations and the authorities (on national, provincial or local level) with a uniform basis for implementing Sections 21, 22 and 26 of the Environment Conservation Act of 1989 (SA Act, 1989). The guideline document is based on Regulation 1182, dealing with the identification of activities which may have a detrimental effect on the environment, and Regulation 1183, which sets out the process that must be used by an independent consultant to prepare a report that reflects the impacts of a proposed project on the environment (SA Regulation, 1997a; SA Regulation, 1997b and Barnard *et al.*, 2003).

## 3.1 The EIA process in South Africa

The process of the complete EIA, as legislated by Regulation 1183, is illustrated in Figure 1 and can be divided into six phases. The application must be made on a form obtainable from the relevant authority and submitted for consideration. After consideration the relevant authority may request the applicant to submit a plan of study for scoping, or in a suitable case, to submit a scoping report without a prior plan of study. A plan of study must include the following (Barnard *et al.*, 2003):

- a brief description of the activity to be undertaken,
- a description of all tasks to be performed during scoping,
- a schedule setting out when the tasks will be completed,
- an indication of the stages at which the relevant authority will be consulted, and
- a description of the proposed method for identifying the environmental issues and alternatives.



Figure 1 The legislated EIA process in South Africa.

A scoping report is to be submitted, once a plan of study has been accepted, or should a scoping report have been requested without a plan of study; which must include (Barnard *et al.*, 2003):

- a brief project description,
- a brief description of how the environment may be affected,
- a description of environmental issues identified,
- a description of all alternatives identified, and
- an appendix containing a description of the public participation process followed, including a list of interested and affected parties and their comments.

After submission of the scoping report, the relevant authority may decide that the information contained in the scoping report is sufficient for the consideration of the application without further investigation, or that the information should be supplemented by an environmental impact assessment. Should this be the case, a plan of study for an environmental impact assessment must be submitted, which must include (Barnard *et al.*, 2003):

- a description of the environmental issues identified during scoping that may require further investigation and assessment,
- a description of the feasible alternatives identified during scoping that may be further investigated,
- an indication of additional information required to determine the potential impacts of the proposed activity on the environment,
- a description of the proposed method of identifying these impacts, and
- a description of the proposed method of assessing the significance of these impacts.

After the plan of study for the environmental impact assessment has been accepted, the applicant must submit an environmental impact report to the relevant authority, which must contain (Barnard *et al.*, 2003):

- a description of each alternative, including particulars on the extent and significance of each identified environmental impact, and the possibility of mitigation of each identified impact;
- a comparative assessment of all the alternatives; and
- appendices containing descriptions of the environment concerned, the activity to be undertaken, the public participation process followed, including a list of interested parties and their comments, any media coverage given to the proposed activity, and any other information included in the accepted plan of study.

Final consideration of the application then takes place and the relevant authority may decide to either issue an authorisation with or without conditions, or refuse the application. The relevant authority must also issue a record of the decision that was taken to the applicant, and on request to any other interested party.

### 3.2 Success of the EIA process

The main idea behind implementing an environmental impact assessment is to safeguard the environment for future generations. The success of the EIA process in South Africa can be measured according to the following:

- an authorisation was given to an applicant and the subsequent activity represented an environmentally sustainable project to the benefit of the applicant and the surrounding population, or
- the complete process was followed and a potential environmental damaging situation was averted by refusing the application.

Examples of the former are evident in the 2002 and 2003 International Association for Impact Assessment South African chapter (IAIAsa) National Premium awards. In 2002 the Hillside Aluminium Smelter Expansion project won the award (UGF, 2002) and in 2003 it was the Skorpion Zinc project (UGF, 2003).

Innovative in the case of the Hillside Aluminium Smelter Expansion project was the conceptualised development of a Project Charter to define due process and to provide measurables against which due process could be tested. The public participation programme was also extensive and the inclusion of environmental education as part of this programme, in the form of briefings to local schools, was a valuable mechanism in assisting learners to understand environmental legislation, including their rights and responsibilities. (UGF, 2002)

With the Skorpion Zinc project, located on a greenfields site in a remote area of southwestern Namibia, the entire environmental assessment process was conducted according to steps outlined in the Namibian environmental assessment policy (similar to the South African process) and was produced to World Bank standards. Once again the public participation process was commendable and the project has applied considerable resources and effort to integrating sustainable development principles into all aspects, both on and off site. (UGF, 2003)

Examples of where the complete process was followed and a potential environmental damaging situation was averted by refusing the application are unfortunately not many. In third world countries the high rate of unemployment makes numerous applications more favourable. Government officials also appear ready to compromise the environment citing lack of capacity as the reason (McDaid, 2001). However, an example of where public involvement ultimately changed the course of things was the case of the Shell N1 Western Bypass filling station facilities.

Shell wanted to construct two new filling stations on each side of a highway in a residential area. Although there was a vast number of irregularities with regard to legislative requirements making the proposal not acceptable, the relevant authority continued to entertain their application for more than five years. Two examples of irregularities were the siting of the filling stations (the proposed site would have been in contravention of distances prescribing the location of a site from other filling stations, rivers, etc; DACEL, 2001) and the fact that no public participation process was completed for the scoping phase, neither included in the relevant report. Continued public pressure would have culminated in a presentation during the United Nations World Summit on Sustainable Development held in Johannesburg, South Africa in August/September 2002. Only then, possibly due to the additional bad publicity Shell would have endured during the summit, after the prolonged public campaign had also reached the national television stations by then, did they withdraw their application (Babich, 2002). However, the public in this instance, similar as in the case of the SAVE campaign (see Section 2.3), had some resources to address and take on the bigger company. One can only imagine the outcome of these two examples had they contemplated their activities in less affluent areas.

Thus, although current environmental impact assessment legislation in South Africa is good, there is still vast improvements that can be made to the actual implementation of legislation to safeguard the environment and the general, normally poor, public against activities initiated with only the relevant applicant's wealth at heart.

## 4. PRACTICAL IMPLEMENTATION OF ENVIRONMENTAL LEGISLATION IN SOUTH AFRICA

In order to address the shortcomings present in third world regions, for example, a lack of education and poverty, the practical implementation of environmental legislation should accommodate for these shortcomings. This would require stricter enforcement by government, as they cannot rely on a public watchdog function due to the lack of education; and to involve poorer communities within projects and activities planned for their areas to assist in the alleviation of poverty.

The EIA process described in Section 3 actually forms part of overall Integrated Environmental Management (IEM) procedures issued in guideline documentation by the government (Heydenrych and Claassen, 1998), of which most principles have already been enacted into legislation through the promulgation of the National Environmental Management Act (NEMA, 1998).

IEM is defined as a combination of pre-active and preventive processes and procedures that maintain the environment in good condition for a variety of short and long range sustainable uses (Heydenrych and Claassen, 1998). The IEM procedures make use of Environmental Management Frameworks (EMFs) as a mechanism for the setting of standards, values, norms and criteria. The EMFs consist of two distinct categories of spatial zones (see Figure 2, adapted from Heydenrych and Claassen, 1998). All available spatial environmental information is assessed and integrated to represent environmental sensitivity zones. Socio-economic development realities (including existing spatial plans, land use policies and regional development visions) are assessed and integrated through intensive public participation to represent strategic management zones. These strategic management zones are then combined with the environmental sensitivity zones to form the relevant Environmental Management Framework. (Heydenrych and Claassen, 1998)



Figure 2 The development process for Environmental Management Frameworks.

These Environmental Management Frameworks, when completed for the relevant provinces, should then govern all new and existing activities in the geographic areas covered by them (Heydenrych and Claassen, 1998). Four IEM procedures have been developed to manage activities that can generate environmental impacts. These are (Heydenrych and Claassen, 1998):

- land use zoning plans and schemes,
- new activities (proposals for new developments or projects, or for extensions to previously completed developments)
- existing activities (developments which are already in operation under conditions that warrant review), and
- activities undertaken in terms of a land use zoning plan or scheme that has already been approved through IEM.

For this paper, only the IEM procedure for new activities will be addressed, of which a simplified presentation is given in Figure 3. During the conceptual stage a proposal for an activity should be formulated in a concise report and presented to the relevant authority. All license/permit applications to different licensing authorities should also be made during this stage. The relevant environmental authority will review the proposal in terms of the relevant provincial EMF. Should the activity at this stage not be permitted in terms of the EMF, the next steps will be unnecessary. The scoping process is then completed by an independent consultant and then reviewed by the relevant authority and interested and affected parties. This review may require that an EIA (which may include a cost benefit analysis for public sector activities) be completed. If the activity is approved in terms of the scoping and/or the environmental impact report, a conditions agreement is drawn up that sets the conditions in terms of which the activity be allowed to take place. Thereafter an environmental management programme (EMP) is compiled for review and acceptance that details the activity initiator's plan and programme for the implementation of the conditions in the conditions agreement. The detailed IEM procedure is shown in Figure 4 (adapted from Heydenrych and Claassen, 1998).



Figure 3 Simplified IEM procedure for new activities.

The IEM procedure for new activities sets out the process steps to be completed for an activity to be started. However, it makes no reference to future controlling aspects in the activity to ensure compliance with legislation and/or the conditions agreement. It can be implied that this is assumed to form part of the scope of work for the relevant authority dealing with whatever media require assessment. [For explanation of the term media: the global environment comprises four linked systems, namely the geosphere, atmosphere, hydrosphere and biosphere (ICHEME, 1993). Environmental damage to these systems can be caused by both natural and anthropogenic activities and the environmental effects of such activities are conveyed through the three principal media: water, air and land (ICHEME, 1993). (The term media, with similar connotations, is also introduced by DEAT (2000) to ascribe future functions of government in the White Paper on Integrated Pollution and Waste Management for South Africa.)]

The above lack of future control/enforcement of legislation, together with the shortcomings related to a third world environment, can be addressed by incorporating future audit functions to the process. These audits can be conducted by government officials or government appointed independent consultants to assess implementation of the conditions set for a specific activity and is illustrated in the revised IEM procedure for new activities in Figure 5.

As the EMP refers mostly to the construction phase of an activity, adding the requirement for an environmental management system (EMS) to the existing IEM procedure can facilitate future adherence and compliance to environmental legislation and best practice policies; once an activity is fully operational (if applicable, based on the relevant nature of an activity). Aspects identified and included in the EMP can possibly provide a large proportion of the information required to compile an EMS, which should preferably follows the ISO 14001 format/system (ISO 14001, 1996).



Figure 4 IEM procedure for new activities.

Once again audits will be required to assess compliance to legislation and, in the event of making use of an internationally recognised system like ISO 14001, compliance to the relevant standard. These steps are also included in the revised IEM procedure shown in Figure 5. Finally, to address the issue of poverty alleviation, the IEM procedure can require that the local public (community) be involved in certain aspects of a project. For example, during construction that contractors should have a certain percentage of their labour force drawn from the local community; and that during the operational phase of the activity/project certain recycling or other projects be initiated that can involve the local public.

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The identification of a local public involvement programme (LPIP) can take place during the scoping and EIA phases of the IEM procedure, with the actual inclusion of a local public involvement programme stipulated in the conditions agreement and the environmental management programme drafted for the activity. Feedback on the LPIP implemented at a specific site/activity can be fed back to the drafters of EMFs for possible inclusion into their future strategic management zones.

### 5. CONCLUDING REMARKS

South Africa is facing unique environmental challenges based on its first/third world conditions. The practical implementation of environmental legislation in the country should take cognisance of these aspects. To assist in this regard, it is recommended that the IEM procedure for new activities be revised to allow for the extension of assessment and audits of projects into the construction and operational phases of an activity. Local public involvement programmes should also be included in the development of an activity's environmental management programme, and results and information obtained from completed processes fed back into the IEM procedure to assist in future decision making.



Figure 5 Revised IEM procedure for new activities.

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