4.4.1 Reliance on Draft Policies

The question arises as to what extent applicants, EAPs and competent authorities need to consider guidelines which have not been published in the manner described in regulations 73 and 74. A decision by a competent authority to grant or refuse an environmental authorisation under the EIA regulations falls within the definition of "administrative action" in PAJA.[111] PAJA provides that administrative action can be reviewed by the courts if a decision-maker "fails to take into account relevant considerations."[112] Therefore, in practical terms, the competent authority must also take into account other guidelines which have not been published in the manner described in regulation 73 and 74 if they are relevant to the decision that the competent authority is making. Applicants, EAPs and I&APs must also be aware of other relevant guidelines in commenting on the application.

A WORKED EXAMPLE

A developer was interested in purchasing a piece of land then zoned for agricultural use and situated on the Western Cape Coast, on which he intended to build a residential development. At the time, a draft Spatial Development Framework ("SDF") had been published by the local authority, which showed the property abutting the urban edge, but inside the edge. The developer was persuaded by this to buy the land and subsequently made application in terms of NEMA for environmental authorisation and in terms of the applicable planning legislation for the land to be re-zoned and subdivided. While these applications were pending, the local authority revised its draft SDF and the property in question was drawn outside the urban edge. The competent authority in respect of the NEMA application refused to decide the matter until the urban edge demarcation was resolved. Similarly the local authority refused to progress the planning applications until it the urban edge had finally been determined. In the meantime, the delay had financial costs for the developer.

Was the developer entitled to rely on a draft policy in making his applications?

To the extent that he did, he bore the risk that the urban edge might be finally determined to exclude his property. Since the SDF was a draft when he made his applications for the various permissions, he would have no recourse against the local authority.

Can the competent authority wait for the SDF to be finalised before making its decision?

The Regulations require that a decision is made on an application within 45 days of acceptance of the EIR. If this timeframe cannot be adhered to then a competent authority must inform the Minister or MEC (unless the competent authority is the Minister or MEC). There are no particular consequences that follow a failure to adhere to the 45-day time limit under NEMA but, in terms of PAJA, the failure to make a decision within a reasonable timeframe constitutes unfair administrative action that is reviewable by the courts. A competent authority cannot therefore delay its decision for an unreasonable period of time. What is unreasonable will depend on the circumstances of each case. If the finalisation of the SDF was imminent, a court might be more likely to find that the delay was reasonable.

An issue that sometimes confronts applicants is what to do in instances where they are relying on information contained in draft policies, for example a Spatial Development Framework (SDF) in submitting their applications. This can be problematic if during the course of finalising the policy it is revised in a way that has an impact on the application. It also presents the difficulty to the authority as to whether it should wait for the policy to be finalised before making its decision. At times, the refusal of the authority to decide the application based on a draft policy may result in delays being faced by the applicant which may have financial costs. The case study (worked example) illustrates such a scenario with particular emphasis on whether the competent authority is entitled to refuse to decide an application until a

[111] See the definition of this concept in section 1 of PAJA.
[112] Section 5

policy impacting on the application has been finalised as well as the question as to whether the developer has any recourse as a result of the delay due to the competent authority not deciding the application until the policy was finalised.

4.5 Determining the scope of the impact assessment

The process whereby the alternatives and issues that require investigation in the EIA are determined is referred to as "scoping." This is a critical step in the EIA process, since if it is not comprehensively done, the EIA will be compromised. In terms of the EIA Regulations, scoping is included in the Basic Assessment procedure whereas it is a distinct step or phase in the case of the Scoping and EIA process. Inadequate scoping is likely to result in the rejection of the Scoping Report or the BAR by the competent authority, which will result in time delays. Essentially the main purpose of scoping is to ensure that thorough identification of issues and alternatives is undertaken. It is also important to determine whether any issues and alternatives should be "scoped out."

IMPORTANT POINTS TO REMEMBER

- It is better to obtain an understanding of the characteristics of the project location before planning and design commences. This will enable the project design to be responsive to the environmental and social setting.
- It is critically important to scope issues relevant to the project thoroughly otherwise the effectiveness of the EIA will be severely compromised. The nett result will be that not all the impacts that should be investigated will be investigated, with negative environmental consequences.
- It is important to explain the rationale for excluding certain issues or alternatives from the scope of the EIA, where the EAP determines that the issue or alternative is not relevant or is not material from an environmental impact perspective. Thus, "scoping out" of issues and alternatives must be fully explained.
- Excluding alternatives solely on the basis of financial feasibility would generally not be accepted in the absence of hard data on the business case. It must be remembered that feasibility is not only dependent on financial factors – a project may be financially feasible, but not environmentally feasible due to lack of the required resources (e.g. insufficient or insecure water supply).

Ideally, the Applicant should initiate preliminary environmental research on the site or sites that are being considered for the development before any detailed design or planning has taken place (e.g. before a concept plan / design or preliminary layout has been formulated), so that any potential significant "red flags" can be identified as early as possible in the process. A preliminary investigation of the site can be conducted before or at the stage that the environmental application is being lodged, depending on the project planning cycle or programme. The rationale for this is that the sooner an understanding of the environmental constraints and opportunities associated with the project location is gained, the better from a project planning and design perspective. Such information is particularly useful in establishing at a preliminary level, whether there are any environmental, cultural or social factors that may render the site inappropriate for the type of development being proposed. Furthermore, this enables the Applicant and design team to take a proactive approach, that is, to plan and design the project in a way that is responsive to the environmental, cultural and social setting, rather than the typical reactive approach, namely assess the impacts when the design and location is already fixed.

In determining the scope of the EIA, certain key questions need to be addressed:

- Given the type of development under consideration, what are the likely effects or concerns based on the resources to be used (inputs) and emissions and wastes (outputs) that will be produced?
- Given the proposed location of the development, what are the potential environmental effects or consequences and concerns likely to be both in respect of the site and its surroundings?

- What are the key linkages and variables that are relevant to considering the environmental effects or consequences that are likely to be associated with the project?
- What alternatives are relevant to the proposed project?
- Of the issues and alternatives identified, which of them require further investigation and why?
- Of the issues and alternatives identified, which do not require further investigation and why?

4.5.1 Scoping the issues

A useful starting point for identifying issues is to consider the following three factors:

1. The materials and resources that will be used by the project;
2. The emissions and wastes that will result from the project; and
3. The characteristics (biophysical and socio-economic) of the project location.

Besides using baseline information on the project and the location or receiving environment to determine what needs to be investigated in the EIA, the following questions should be considered and if the answer to any of the above questions is "yes" then the issue should be considered for further assessment.

PRACTICAL EXAMPLES

These photographs show the importance of considering coastal erosion processes. With the listing of construction activities within 100m of the high water mark of the sea, such development requires environmental authorisation. It will be necessary to consider issues such as climate change and the consequences of sea level rise on coastal erosion processes, even at a project level. Hence, the EAP will need to consult experts in climate change prediction and the effects for the coastal area.

Inadequate chemical storage – The photograph shows the result of not considering the need to provide for appropriate storage of chemicals. For example, there is no secondary containment / bunding at this facility. If there is a spill it would run onto the surrounding soil. Continued spillage over time could lead to significant soil and groundwater contamination. Inadequate scoping means that environmental impacts and controls are not comprehensively addressed. This compromises the ability of the EIA to serve as a tool to avoid or prevent impacts and where these cannot be fully prevented, to minimise them.

Informal waste disposal – This photograph shows the results of inadequate consideration of waste handling and storage requirements for an industrial project. Firstly, there was inadequate scoping of the project needs. Secondly, the question of how waste would be handled during the operational phase was not addressed. Waste was not identified as an issue which means the associated impacts and mitigation measures were not adequately addressed in the EIA process. The result of inadequate scoping is that environmental has not adequately protected from pollution.

In order to assist the process of identifying issues, activities and impacts matrices have been developed for the different project categories or sectors covered in this guideline (See Annexes C – G). There are three matrices for each category or sector, which correspond to the questions listed at the beginning of Section 4.5.1:

- Issues related to location
- Issues related to resource use
- Issues related to emissions and wastes

Each matrix has the issues listed across the top (x-axis) and the applicable Listed Activities down the side (y-axis). Only those Listed Activities that clearly fall within the sector are listed. The Applicant / EAP must take due cognisance of other applicable activities as has been explained in Section 4.2 of this guideline.

A checklist of questions has also been provided (Annex B) to assist in scoping issues. Three separate lists of questions are provided, which are structured along the same lines as the matrices – questions relating to (i) location, (ii) resource use and (iii) emissions and wastes. The lists can be used separately or in combination with the matrices. Questions relating to factors that could serve to reduce or avoid impacts or that are relevant to determining mitigation measures are included in a fourth list (Project Planning and Design Considerations). If consideration is given to these issues early in the project development process, the potential to avoid or minimise environmental impacts in planning and designing the project could be substantially enhanced.

A WORKED EXAMPLE

Question from Annex B:

Is any subsistence farming undertaken on the site or surroundings?

Answer:

Yes (based on site observations and consultation of local communities)

Other questions to consider:

- Is any of the produce sold outside of the local area, thereby generating income?
- Do the producer's of food trade foodstuffs with each other?
- What traditional food production methods are used and could this knowledge be lost?
- Is the community generally healthy? If so, from the community's perspective what is the relationship between health and being able to produce their own food? What is the view of health worker's on this issue?
- What is the overall contribution of producing their own food to the community's ability to feed itself? How dependent is the community on being able to purchase food from elsewhere?

Implication for the scope of the impact assessment:

The impact of the project on subsistence farming must be addressed in the social specialist study. It will also probably be necessary to obtain input from an expert in agricultural potential and subsistence farming. Close liaison between these specialists will be required. Potential impacts could include:

- Loss of access to farming land
- Loss of / decreased self sufficiency for the community from a food production point of view
- Disruption of community structures / networks, norms and traditions, since certain people / community members may be responsible for food production
- Increased dependence on job creation for income (e.g. to purchase food that used to be grown)
- Loss of sense of place
- Opportunities to learn new skills due to employment creation
- Loss of tenure (if land owned)
- Loss of commonage (if community owned)

The tools are aimed at providing "triggers" or pointers to assist in identifying issues that require investigation. When using these tools, it must be borne in mind that they represent a starting point and are aimed at supporting the "issues identification thinking process." Thus use of the checklist of questions (Annex C) and the issues in the matrices (C-G) must not be taken as being the only consideration. Furthermore, it must not be assumed that use of the checklist and matrices will automatically result in the correct and complete scoping of issues. These tools are not a replacement for professional judgement. A worked example is given in the box alongside. This

demonstrates how one question can lead to several other questions, all of which have a bearing on the scope of the impact assessment.

4.5.2 Determining "reasonable" alternatives

The requirement to consider alternatives is set out in NEMA. Section 24 provides that: "procedures for the investigation, assessment and communication of the potential consequences or impacts of activities on the environment must include, with respect to every application for an environmental authorisation and where applicable, investigation of the potential consequences or impacts of the alternatives to the activity on the environment an assessment of the significance of those potential consequences or impacts, including the option of not implementing the activity." The consideration of alternatives is therefore mandatory. In this context, it is important to note that the word "activity" is narrowly defined in the EIA Regulations to mean an identified activity (i.e. an activity that appears in Listing Notice 1 or Listing Notice 2).

DEBUNKING THE MYTHS

MYTH 1: It is the responsibility of I&APs to identify alternatives. The mechanism for identifying alternatives is the Public Participation Process.

THE REALITY: Whilst I&APs may contribute to the formulation of alternatives, it cannot be claimed by the EAP or the Applicant that a particular alternative was not assessed because it was not identified through the Public Participation Process. It is the professional responsibility of the EAP to ensure that all reasonable alternatives are identified and assessed. It is also the responsibility of the EAP to ensure that if an alternative is rejected, this is based on a sound rationale. The EAP must apply his / her expertise and consult the project planning / design team to identify alternatives.

MYTH 1: It is sufficient to exclude alternatives by stating that the preferred alternative is the only one that is financially viable. Any alternative that involves a smaller scale or lower density development is not financially feasible.

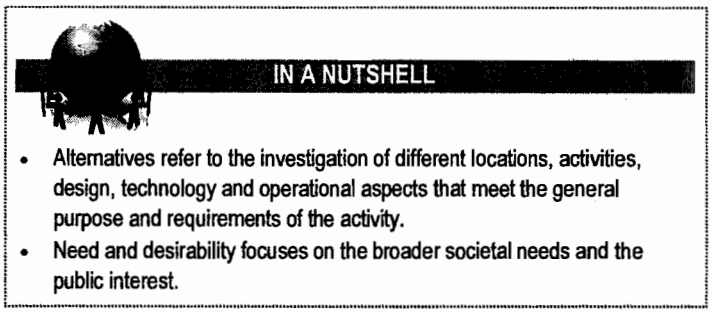
THE REALITY: There are various types or categories of alternatives that must be considered. Furthermore, if financial feasibility is used as the sole basis for excluding alternatives, this must be backed up with thorough financial data. Finally, it must be borne in mind that the alternative that is put forward as being the only one that is financially feasible may prove to be unsustainable from an environmental perspective and thus refused by the environmental authority. It is therefore advisable for Applicants to consider smaller and lower density options, particularly in areas that are known to be environmentally sensitive. This may mean adopting a different model of what "financial feasibility" or "business success" constitutes.

The EIA Regulations require that alternatives that are "feasible and reasonable" must be described in the BAR[113] or in the Scoping Report[114], whichever is applicable. Neither "feasible" nor "reasonable" is defined in NEMA or the EIA Regulations. These terms must therefore be given their ordinary meaning. The ordinary meaning of reasonable is "fair and sensible" or "as much as is appropriate or fair."[115] Feasible may be defined as follows: "possible to do easily or conveniently."[116] A guideline produced by the Department of Environmental Affairs and Tourism (now the Department Environmental Affairs) states that: "The number of alternatives that are selected for assessment should not be set arbitrarily, but should be determined by the range of potential alternatives that could be reasonable and feasible and should include alternatives that are **real** alternatives to the proposed activity. The process of selecting alternatives should be clearly documented."[117]

---

[113] Regulation 23(2)(g).
[114] Regulation 29(1)(b).
[115] *Concise Oxford English Dictionary* 11 ed, 2004, 1198.
[116] *Concise Oxford English Dictionary* 11 ed, 2004, 519.
[117] DEAT (2006) *Guideline 5: Assessment of Alternatives and Impacts in support of the Environmental Impact Assessment Regulations, 2006.* pages 2-3.

It is, therefore, important to document the entire thinking process that has been followed by the Applicant and the design team in developing the project proposal. Often alternatives are considered and are rejected on the basis of technical feasibility or cost or both. This process may take place before any detailed planning and design work is undertaken. Notwithstanding, for the purposes of the EIA process, it is relevant to document the rationale for adopting a particular design or approach to the development. Extreme care must be exercised when excluding alternatives solely on the basis of financial feasibility. Feasibility needs to be more holistically considered and take account of environmental and social constraints as well.



Another factor that needs to be borne in mind in respect of alternatives is that a description of the need and desirability of the proposed activity and the associated alternatives must be provided in the BAR or the EIAR. In essence, need and desirability refer to the question of whether it is the right time and right place for locating the type of land-use that is being proposed.[118]

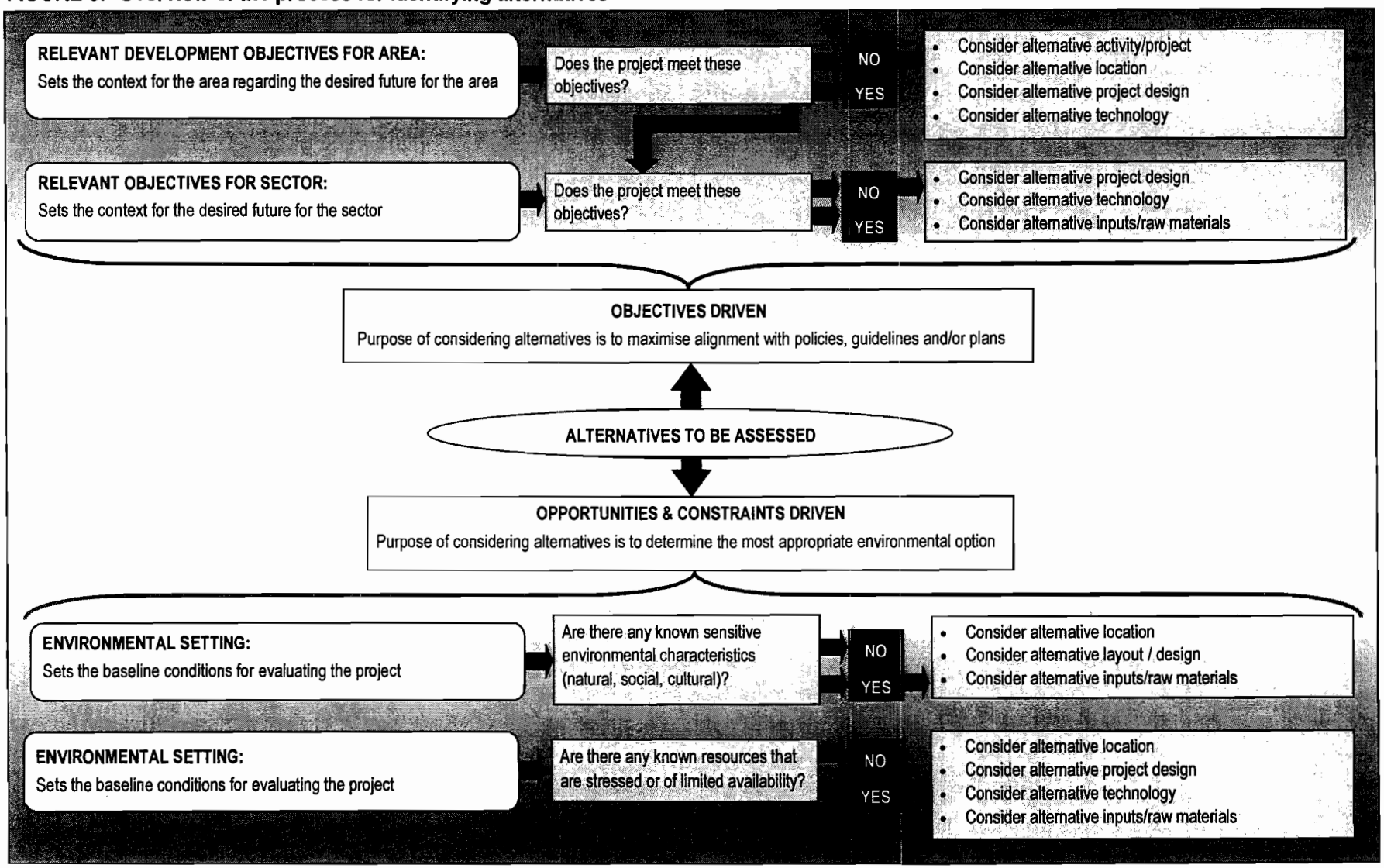
Cognisance needs to be taken of the following when determining "reasonable alternatives":

- What are the development objectives or goals for this area? Any policy, plan, strategy or guideline that is relevant to the utilisation of land and/or the development direction / approach for the area on which the site/property is located (e.g. SDF, conservation plans).
- What are the objectives or goals for this economic, business or development sector? Any policy, plan, strategy or guideline that is relevant to the development or business sector with which the application is concerned (e.g. energy-related projects should make reference to national and provincial policies on climate change).
- What is the current environmental setting? The characteristics of the receiving environment are important in determining how well suited the proposed development is in the context of the surroundings.
- What are the available environmental resources? This factor relates to the resources required by the project from the local area (e.g. water, energy, effluent treatment capacity, waste disposal capacity, availability of local labour etc.).

The identification of "reasonable alternatives" should encompass a bottom-up as well as a top-down approach as is illustrated in Figure 3. Evaluating the opportunities and constraints (as indicated in the following diagram) is relevant to determining whether or not the proposed development and each alternative, is ecologically sustainable.

[118] DEA&DP (May 2009) Guideline on Need and Desirability, NEMA EIA Regulations Guideline and Information Document Series. Western Cape Department of Environmental Affairs and Development Planning.

FIGURE 3: Overview of the process for identifying alternatives



From an EIA best-practice point of view, the purpose of considering alternatives is to identify the most appropriate option from an environmental perspective (i.e. considering biophysical and socio-economic factors). Thus, the consideration of alternatives and the consideration of mitigation measures often go hand-in-hand. For example, in determining ways to avoid environmental impacts, an alternative project design or layout may emerge. This represents a variation of that alternative, namely a version where the impacts may be reduced relative to the original way in which the alternative was conceived. Thus the means for preventing, or at least minimising impacts (i.e. impact mitigation) is to change the project design or layout. For example, on a site where the site layout would result in having to remove Red Data species, this impact could be avoided by altering the layout. This is a mitigation measure, namely altering the development footprint to avoid a negative environmental impact.

A WORKED EXAMPLE

A developer acquires a large site (600ha) on the coastline, which is located about 20 kilometres outside of the nearest town/urban centre. The following is proposed:

- A spa and gym facility
- An eighteen hole golf course
- A 50-room hotel
- A hiking trail along the coast
- 450 single dwellings / lodges
- 450 townhouse style homes

The total development footprint amounts to 460ha and it is proposed that the remainder be managed as a nature conservation area. An alternative is proposed comprising 430 townhouse style homes and 420 single dwellings, which will result in a decrease in the footprint of about 10 ha. The layout is essentially the same as the original proposal. It is stated that this is the only feasible alternative, based on a financial factors. No other alternatives are identified besides the "no go" option, which is mandatory.

Is the identification of alternatives acceptable? No

Why not? Only one layout alternative is being put forward and it is not significantly different from the original proposal in terms of its density and extent or "development footprint." It represents a minor variation of the original proposal.

What would constitute a "reasonable alternative"? Examples would be:

- A significant decrease in density and / or the development footprint (e.g. 30-50% less may be considered a significant change relative to the original proposal).
- A development concept based on small holdings combined with nature conservation-based tourism and/or agri-tourism
- A development concept that excludes the golf course.
- Use of alternative building materials and designs / architectural styles.
- Alternative water and energy sources.
- Alternative ways of dealing with sewage / domestic effluent / stormwater

Great care must be taken in ensuring that cognisance is taken of all reasonable options across all categories or types of alternatives. Stated differently, it is generally not adequate to only consider one type of alternative for a project, such as only different site layout options. For example, alternative technologies or engineering solutions for handling stormwater could be considered. These should be assessed on a comparative basis, the objective being to determine the most environmentally acceptable (i.e. with least environmental impact) option. Table 7 shows the types or categories of alternatives, with examples within each type. The relevance to each of the sectors covered in this guideline is also shown in the table. Another area where alternatives may emerge is in the consideration of mitigation measures. For example, there may be more than one way in which to avoid or minimise a particular impact. These alternative mitigation measures must then be assessed on a comparative basis to determine which will be the most effective in avoiding or minimising the impact.

TABLE 7: Applicability of types of alternatives

ALTERNATIVE TYPE	AGRI-INDUSTRY	ENERGY	SOCIAL DEV. & PROPERTY	LINEAR
Location				
Project / site location	✓	✓	✓	✓
Design / layout				
Positioning of development footprint	✓	✓	✓	✓
Size / extent of development footprint	✓	✓	✓	✓
Architectural design	✓	✓	✓	
Engineering design	✓	✓	✓	✓
Size, scale and height of structures and buildings	✓	✓	✓	✓
Site access	✓	✓	✓	
Technology alternatives				
Energy generation technology (renewable, non-renewable)		✓	✓	
Chemicals (hazardous, non-hazardous, biodegradable etc.)	✓	✓	✓	
Water conservation	✓	✓	✓	
Energy conservation	✓	✓	✓	
Air emission treatment technology	✓	✓		
Industrial effluent treatment	✓	✓		
Domestic effluent treatment	✓	✓	✓	
Solid waste treatment	✓	✓		
Solid waste recycling	✓	✓	✓	
Heating and cooling systems	✓	✓	✓	
Refrigeration (electrically driven cooling)	✓			
Input materials				
Water source (municipal, surface water, groundwater, recycled)	✓	✓	✓	
Agricultural produce organically / not organically produced	✓			
Packaging (biodegradable, organic, non-plastic, recyclable)	✓			
Chemicals (hazardous, non-hazardous, biodegradable)	✓	✓	✓	
Energy (renewable, non-renewable)	✓	✓	✓	
Energy (coal, fuels)	✓	✓	✓	
Building / construction materials	✓	✓	✓	✓
Operational aspects				
Mode of transport	✓	✓	✓	
Transport routes	✓			
Packaging (biodegradable, organic, non-plastic, recyclable)	✓			
Chemicals (hazardous, non-hazardous, biodegradable)	✓	✓	✓	
Energy (renewable, non-renewable)	✓	✓	✓	
Energy (coal, fuels, gas)	✓	✓	✓	

4.6 Developing Terms of Reference for specialist studies

The EAP would generally be responsible for drawing up the Terms of Reference (ToR) for specialist studies. Reference should be made to relevant guidelines when determining the scope of a specialist study. Guidance in this regard can be obtained from the document on specialists studies that have been published by the DEA (formerly the DEAT) as part of the IEM Guideline series (refer to Table 6 in this guideline). In addition, the Western Cape's DEA&DP have published a series of guidelines on involving specialists in EIA, these being heritage, economic, biodiversity, hydrogeological, and visual and aesthetic specialists (refer to Table 6 in this guideline).

Items that should be addressed when drawing up the ToR are listed below:

- The scope of work required to assess impacts raised in relation to the project and its alternatives, as well as the "no-go" option.
- The need to consider background trends or likely scenarios that may influence the assessment;
- The need to consider relevant policies, guidelines and plans;
- The determination of the significance of impacts and benefits, based on a specified agreed methodology discussed in consultation with the specialist.
- The identification important gaps in information, inherent uncertainties and/or risks.
- The recommendation of mitigation measures that would assist in avoiding or at least minimising possible impacts, for each phase of the development (design, pre-construction and construction, operation and decommissioning and closure (if relevant)).
- The determination of the significance of the impacts before and after mitigation.
- The provision of recommendations to optimise or enhance potential benefits.
- The likelihood of mitigation being effective and/or implemented.
- The need to comment on the cumulative impacts related to the proposed development, if relevant.
- The need to liaise with other specialists within the EIA team at particular points.
- The need to contribute to the public participation process.

Important points for the EAP to note are as follows:

- The EAP must ensure that specialists have appropriate experience. Where possible, specialists that are registered with a professional organisation should be appointed (not all professions are organised in this manner). If it is clear that the Specialist is "out of his/her depth" the EAP may have to cut the appointment short and find an alternative specialist.

- The EAP must consult the specialist about the ToR. The specialist will be able to identify requirements based on his / her expertise, possibly more effectively than the EAP. Furthermore, the EAP should consult the specialist regarding the criteria and methods that should be applied to the assessment of impacts.

- The EAP must make provision for specialists to interact with each other. It is advisable for the EAP to organise such team working sessions at key stages in the process in order to ensure cross-pollination of ideas and findings within the team. The EAP is responsible for ensuring that specialists fulfil their ToR. If the Specialist has not done so, then the EAP must ensure that the Specialist report is revised until it meets these requirements. If there is conflict about the extent to which the ToR has been met, an independent review may need to be undertaken.

- The EAP is responsible for ensuring that information from specialist studies is integrated into the EIAR. If information or recommendations are conflicting information or comes from specialists, it is advisable to conduct a working session with all the specialists in order to understand the links and inter-relationships between environmental issues. The team (specialists and EAP) can agree the position that should be reported. This will result in a more integrated approach.

In terms of defining the scope and focus of the specialist studies it can be useful to determine the questions that need to be answered. This can assist the scoping of the study as well as ensuring that it focuses on the relevant issues. The list of questions in Annex B should assist in this regard.

A worked example is given alongside that demonstrates the importance of including the issues that are related to the project itself (e.g. risk to community of using a hazardous substance) and the issues that emerge from the social setting (e.g. farm community's concern about being prioritised in respect of employment opportunities) in the scope of the social study. Thus, whilst there are issues that would typically be addressed in almost all social studies, the scope of the study must be customised to meet the unique issues related to the social environment and / or to the project.

A WORKED EXAMPLE

A social impact assessment is needed for an agri-industry that is being proposed on a fruit farm. It is proposed to use ammonia for chilling purposes. Ammonia is a hazardous substance. This means that a MHI risk assessment will be required. The project will be located in a rural area. There is a small farm labourer's village about 500m away from the proposed facility. This community has lived and worked on the farm for several generations. The nearest town is about 1 kilometre away. Unemployment in the town is quite high and these local communities are in favour of the project because of the job opportunities. People living on the farm would like the opportunity to learn new skills. Given their ties to the area, they believe they should be given priority in terms of employment opportunities at the proposed factory.

Key questions that need to be addressed in the social study are as follows:

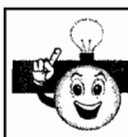
- What risks does the project pose for the farm community and the nearby town?
- What employment and local business opportunities does the project present?
- What skills and services are available within the local area that could be procured by the facility?
- What skills are required by the facility for its operation and are these skills readily available in the local area?
- Are there any community-based projects within the area or in close proximity to the site that could be adversely affected by the project or that could benefit from the project?
- What potential economic knock-on benefits does the project offer in the context of the local economy?
- How should the Applicant / developer set up its risk communication programme and what should this programme comprise?
- What effect could the facility have on the farm community in respect of its existing culture, norms and social networks?
- How should the Applicant / developer deal with potential competition for jobs between the farm community and the town community?
- How many permanent jobs will be created? How many permanent jobs will be created at each job level (labourer – manager)?

It is likely that as information is gathered in respect of the above questions, that further questions will arise. It will be necessary for the social specialist and the MHI risk assessor to liaise with each other.

4.7 Undertaking public participation

There are a number of guidelines that have been published regarding public participation (e.g. the IEM Information Series published by the Department of Environmental Affairs and Tourism). As a general rule, particularly for the types of developments that fall within the sectors that are the subject of this guideline, basing the public participation process on the minimum requirements as set out in the EIA Regulations is unlikely to be adequate. These developments are complex and to this end the process should be based on an appropriate level of participation. In this regard, reference should be made to the document entitled 'Stakeholder Engagement', published in 2002 by the Department of Environment Affairs & Tourism (Integrated Environmental Management Information Series 3) or an equivalent. This means that the EAP should not blindly follow the requirements of the EIA regulations (i.e. adopt a tick-the-box approach).

By way of guidance, involvement is considered a more appropriate and acceptable level of participation than that of consultation, particularly in the case of large-scale projects. Involvement is based on working directly and consistently with stakeholders to ensure that their concerns are addressed throughout the process. Consultation is based on receiving feedback from stakeholders and keeping them informed.



IMPORTANT POINTS TO REMEMBER

Useful tips for conducting public participation in rural areas and informal settlements

- Translators and interpreters must be used where necessary.
- Security or police escort to be requested where there is reasonable apprehension that safety of officials will be compromised.
- Involve community leaders and community associations to facilitate more effective participation.
- Site notices must be in the language that is mostly spoken in the area otherwise they will be disregarded or seen as a way excluding the locals.
- Use should be made of the radio where there is a high level of illiteracy.
- The PPP must be sensitive to cultural norms. For example, in most rural areas traditional leaders are regarded with high respect, it is therefore always wise to consult them first. Generally, the traditional leader determines the other people that need to be informed. Thus, traditional leaders should be consulted first, before any other leadership (e.g. religious leaders).
- Meetings with community leaders should be undertaken – newspapers do not reach everyone; face to face meetings with representatives are preferred.

Some general considerations for the PPP are given below:

- The independent EIA consultant must ensure that information is presented in an accessible manner, using clear and simple language.
- An independent facilitator should undertake the PPP in circumstances where the project is located in a sensitive area from an environmental and social point of view and has the potential to be controversial, rather than the EIA consultant. A high-level of specialist facilitation expertise may be warranted for these projects due to their complexity and the potential for conflicts to arise.
- It is considered bad practice for the developer to undertake any public participation activities, such as publishing newsletters and the like. The implementation of the PPP must be left entirely in the hands of the independent facilitator or public participation practitioner including the preparation of newsletters, information sheets, posters, background information documents, advertisements and any other documentation required for the process.
- The PPP must make provision for different languages of I&APs. In addition, appropriate communication tools must also be employed. In communities where literacy is an issue, a means to obtain or record verbal submissions should be implemented. This issue is of

particular relevance to linear projects, where several communities over a wide area could be affected by the project.

- The person responsible for the PPP should always liaise with the social scientist/specialist on the team. This is in order to ensure that the PPP is structured to enable local and traditional knowledge to be accessed. In addition, the social scientist would often conduct interviews and focus groups to obtain information for the purposes of the Social Impact Assessment. It is important that the PPP and any consultation that is undertaken for the purposes of gathering social information dovetail.

- In the EIA documentation (i.e. BAR, Scoping Report, EIAR), the description of the PPP must include an explanation of how the input from I&APs influenced the project. If the public participation process did not change the project in any way or influence the EIA process an explanation as to why this is the case must be given.

- Consideration should be given to making financial provision for I&APs to obtain access to professional expertise, particularly for complex projects. A fund that is independently administered could be set up by the developer for this purpose, which would have to be on a 'no strings attached' basis. This may be of particular relevance for highly technical projects, such as those in the energy (e.g. nuclear power plant) and possibly the agri-industry sectors. The purpose thereof would be to enable I&APs to access skills to assist them to understand highly technical matters relating to environmental risks.

- The making of commitments that are conditional on the community support for the project is unacceptable. This is different to, for example, stating that if approval is obtained, an employment policy of 'local first' will be adopted. Any party that is aware of conduct that can be considered as coercion should inform the relevant competent authority of this concern. Proposed projects for the community (e.g. the building of a school or clinic; the establishment of a Community Trust) should not be linked to the project in any way. Such initiatives fall within the category of Corporate Social Responsibility and are therefore voluntary in nature. This means that they have no bearing on whether the project should be authorised or refused.

- The only advertising that should be undertaken is that required in terms of the EIA Regulations. This is often a concern with large-scale property projects, where the development is advertised (e.g. "lifestyle" estates) before approvals are granted.

- Advertising and notifications must take account of the official language groups of I&APs.

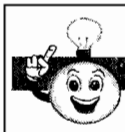
- Any petitions that are submitted by I&APs, whether for or against the development, must be accompanied by a sworn statement, signed in front of a Commissioner of Oaths, that there has been no coercion involved in initiating the petition and that signatories understood the content of what they have underwritten.

4.7.1 Categories of I&APs

The typical categories of I&APs would include:

- *Local communities*: These would include the general public (individuals) located in the vicinity of the project. It is important to understand local community structures in order that the leadership can be adequately consulted. This can be an extremely complex exercise, particularly where there is a diversity of communities that need to be considered. The EAP/independent facilitator and social specialist need to work together in this regard. In rural communities it is of particular importance to be respectful of traditional leadership structures.

- *Commenting authorities / organs* of state that have an interest in the project or that have a decision-making role in the context of their legislation.



IMPORTANT POINTS TO REMEMBER

Dealing with commenting authorities

- Commenting authority to give comments to the EAP and copy them directly to the competent authority.
- EAP to make every reasonable effort to get comments and to retain proof of efforts. For example, the EAP could set up interviews with the commenting authority in order to obtain their input. The minutes of the meeting would serve as a record of the commenting authority's views. These minutes must be provided to the commenting authority for confirmation.
- At the stage of draft EIAR, if no comments are forthcoming, the EAP should consider writing to the authority concerned. For example, the EAP could in his/her written communication state that if no comments are forthcoming within a certain timeframe then it will be assumed that there are no comments and this will be recorded as such in the EIAR.

- *Environmental NGOs*: These may be organisations that operate at a national level to localised groups. Whilst many of these bodies are concerned with issues relating to natural resources, some are focused on specific environmental issues (e.g. GroundWork is involved in air quality; Earthlife Africa is involved in nuclear energy). Those organisations involved with cultural, historical or heritage issues also fall into this category (e.g. historical societies, aesthetics committees).

- *Professional or business organisations*: Such organisations include business groups (e.g. local Chamber of Commerce) or professional organisations (e.g. Institute of Architects).

Local communities must always be consulted as must commenting authorities. The EAP must apply his / her mind as to which I&APs should be contacted. The municipality's advice can be sought in this regard. I&APs will also register in response to adverts and notices (e.g. site notice, notices at local libraries). The EAP needs to determine specific I&APs that may be relevant to the proposed development. Some examples for the sectors covered in this guideline are listed below.

TABLE 8: I&APs that may be relevant to particular sectors

SECTOR	POTENTIALLY RELEVANT I&APS
Agri-industrial	• Department of Agriculture, Forests and Fisheries • AgriSA or regional agricultural organisations • Farmers associations or co-operatives • Relevant industry organisations
Energy	• Environmental NGOs focused on energy and / or climate change issues • Department of Energy • Environmental Health Department in the municipality • Provincial department responsible for air pollution matters • Directorate responsible for air pollution within DEA • Body that controls / manages energy issues (e.g. National Nuclear Regulator)
Large-scale property development	• Planning Department in the municipality • Local heritage or aesthetics committee • Local conservation organisations and/or authorities • Department of Water Affairs (if rivers or wetlands involved)
Social infrastructure and housing	• Provincial and municipal housing and engineering departments • NGOs involved in human settlement issues (e.g. community market gardening) • Transport organisations (e.g. bus companies, taxi associations)
Linear projects	• Road or rail safety transport association (if relevant) • Department of Water Affairs (if stream crossings involved) • Local conservation organisations and/or authorities

4.7.2 Using dispute resolution methods

Dispute resolution is a collaborative process where all the parties involved in a dispute come together in an attempt to amicably resolve the problem. The parties can either attempt to resolve the problem amongst themselves or a third party who has no personal interest in the matter can facilitate and mediate the resolution process. The dispute resolution process allows opportunities for both sides to put forward their concerns. As a result of having their views considered, the parties are more likely to support the final outcome. Dispute resolution allows the parties to be creative and foster better relationships and provides an opportunity for new ideas to be generated to address problems. It is a useful tool and should be encouraged to resolve disputes during the EIA process, so as to avoid unnecessary litigation.

4.7.3 Dealing with the question of expropriation

While expropriation does not directly tie in with the EIA process, there are sometimes practical implications for applicants where land needs to be expropriated. Land prices may be inflated by landowners who, as a result of the EIA process, realise the importance of their land to the applicant. This situation and possible ways to avoid it are discussed in the case study below.

WORKED EXAMPLE

The construction of a gas pipeline requires land to be expropriated along the route. As soon as owners hear via the EIA public participation process that their land is required for the pipeline, or that an environmental authorisation has been granted for a specific route, they immediately raise the price at which they are prepared to sell their land or grant a servitude across it.

How can this situation be avoided?

There is no connection between the EIA process and the expropriation process; an EIA process can be conducted on land that is not owned by the applicant, therefore expropriation could in theory take place before the EIA process is started, during it, or after an environmental authorisation has been granted. In the case of a linear development such as a gas pipeline, the difficulty is that the route of the pipeline will be determined by the investigations undertaken during the EIA, so it is often not possible to purchase or expropriate the necessary land or rights of way over the land before the EIA is concluded.

In the case of non-linear developments, the consent of the landowner is necessary where the applicant for an environmental authorisation is not the landowner. Where the applicant is an individual or entity in the private sector he, she or it has the option of purchasing the land first and then making application for authorisation, removing the possibility that the landowner will negotiate a higher price once he or she realises the value of the land to the applicant, but taking the risk that the listed activity may not be authorised after an EIA process. However, if the applicant is a public entity it may be obliged by its procurement policy to undertake the EIA process before purchasing the land.

A possible solution in this case study may be for the Applicant to purchase the land or rights of way over the land subject to the condition that the sale agreement will lapse if an environmental authorisation is not granted within a specific time, or if the route of the pipeline as authorised by the competent authority excludes the property in question. This would allow the applicant to negotiate a price for the land or rights, before the EIA process is started.

4.8 Assessing the significance of impacts

The assessment and evaluation of potential environmental impacts is probably the most important step in the EIA Phase, because it is concerned with predicting the potential consequences of the proposed development and the significance of these effects on the environment (biophysical and socio-economic) before and after mitigation. There are various methods for assessing and evaluating impacts, including checklists, matrices, networks, overlays and computer expert

systems. A useful summary of some of these is available in the DEAT (2002) IEM Information Series Document 5 on Impact Significance. Generally, the process of impact assessment and evaluation involves a number of steps as shown in the table below (e.g. Canadian Environmental Assessment Agency, 1994):

TABLE 9: Key steps in assessing impact significance

STEP	CRITERIA
Step 1: Deciding whether the environmental effects are adverse	The quality of the existing environment is compared with the predicted quality of the environment once the project is in place. For example, negative effects on human health, well-being or quality of life.
Step 2: Deciding whether the adverse environmental effects are significant	Criteria used are: • Conformance with spatial plans, policies and guidelines, including the NEMA principles • Geographic context • Duration and frequency • Degree to which the adverse environmental effects are reversible or irreversible • Ecological context • Social context • Conservation targets • Degree of change relative to current situation • Social structure and values • Internationally accepted health and safety standards
Step 3: Deciding whether the significant adverse environmental effects are likely	Criteria used are: • Probability of occurrence • Scientific uncertainty
Step 4: Deciding whether proposed mitigation measures are adequate or not	Criteria used are: • Residual risk/impact • Scientific uncertainty • Internationally accepted standards • Environmental thresholds (e.g. water quality standards)

There are various methods for determining whether an adverse environmental effect of a project is significant or not. Reference in this regard can be made to the IEM Information Series No. 5 published by DEAT (now DEA), which deals with Impact Significance. Significance criteria should be appropriate to the circumstances. It is important that the EAP establish clear evaluation criteria and that these are fully explained in the EIAR. In this regard, factors or criteria that should be included in evaluating the significance of impacts include:

- Environmental standards or objectives (e.g. water or air quality), thresholds, targets (e.g. biodiversity conservation), guidelines and other environmental quality objectives.
- Level of public concern (including both norms and values).
- Irreplaceable loss or deterioration of biodiversity, and/or of valued resource stocks, and/or ecosystem services.
- Irreplaceable loss or deterioration of heritage resources, cultural or indigenous norms and values and/or of social structure and support systems.
- Foreclosure of land and resource use opportunities.
- Contribution to decreasing the gap between wealthy and poor, vulnerable communities.
- Equity in the distribution of impacts and benefits between communities and between communities and individuals.

The EAP must ensure that an appropriate methodology is used for determining the significance of impacts. Significance can, for example, be defined by any of the following (or combination thereof):

- statistically (e.g. risk levels, % loss of a resource)
- by legal standards and guidelines;
- adopted plans and policies (relevant to the location such as an SDF or relevant to the sector such as an energy plan);
- traditional and local knowledge;
- established / known good practices;
- public perceptions or values;
- authority views; and
- need and desirability factors.

The methodology that is used to determine significance should consider both the applicable objectives and the baseline environmental situation where the project is being proposed. This allows the assessment to be objectives-driven whilst taking account of the existing environmental parameters. The overarching issue to be addressed is: "What is the significance of this impact given the objectives applicable to the project and the environmental setting in which it is being proposed?" The objectives applicable to the project can be derived from the NEMA principles, from policies and plans adopted for the area or type of development (e.g. energy policy, housing policy) and from objectives that the Applicant, design team and EAP have determined for the project (e.g. to adopt a "green" building approach).

Care must be taken when using methodologies that combine a number of criteria into one assessment factor, as is the case where the impacts are rated in terms of extent, severity, magnitude, duration and the like. Some of the criteria that make up each of these elements or factors (e.g.

PRACTICAL EXAMPLES

- **AGRI-INDUSTRY:** Industrial effluent will be produced, which will have a high COD (Chemical Oxygen Demand). Consideration is being given to disposing it into a nearby river. There is concern about the impact on aquatic ecology. The specialist finds that the impact will be of high significance. If the effluent is not treated to improve its quality, this impact will be long-term and will disrupt the ecological functioning of the river. In order to avoid or minimise this impact, consideration will have to be given to on-site treatment or to not disposing the effluent to the river (e.g. disposal to landfill). Alternatively, the impact could be resolved by changing the manufacturing process. Ultimately an engineering solution will be required to resolve the issue. Without mitigation the impact will be of high or very high significance. The alternative mitigation measures need to be assessed to determine the most effective from an environmental perspective. The significance of the impact will then be rated for each of these mitigation options to provide a comparative assessment.
- **ENERGY:** A power station is being proposed on agricultural land on which maize is being grown. The site will be 300ha in extent. It has water rights attached to it. The provincial Department of Agriculture's plan shows that the area must be maintained for agricultural purposes as it is one of the most productive maize growing areas in the country. If the development goes ahead the loss of agricultural land will be of high significance. (i.e. permanent, irreversible impact). An impact such as this may represent a "fatal flaw" meaning that it is of sufficiently high significance to result in the project being refused. In these circumstances, if the significance of the agricultural issue is determined at a very early stage in the project planning process, this increases the ability of the Applicant to identify an alternative less sensitive site.
- **SOCIAL INFRASTRUCTURE & HOUSING:** A low cost housing development is proposed on 300 ha of agriculturally productive land that the provincial Department of Agriculture considers of strategic importance from a food security point of view. As a result it is determined that at least 100ha should be retained for agricultural purposes, which is to be run by the community. An additional 20ha will be set aside for market gardening. In this scenario, there will not be a total loss of agriculturally productive land as is the case with the energy sector example given above. In assessing the impacts, it will be necessary to consider the beneficiary community's values, the views of the Department of Agriculture and take into account social impacts and benefits as well as the findings of the agricultural specialist. The assessment of this impact is not as straight forward as the energy example – it requires a multidisciplinary approach.

magnitude or severity) may be more important than others depending on the nature of the development and the receiving environment. In these circumstances, the EAP should highlight the priority criteria and ensure that these play a prominent role in the significance rating. For example, the permanent loss of irreplaceable biodiversity will be a significant impact that cannot be mitigated. The significance of this impact should ordinarily not be downgraded (e.g. from high to medium) if the spatial extent of the impact is considered to be small, by virtue of the fact that the biodiversity is irreplaceable. Furthermore, in an objectives driven approach, the significance should take cognisance of the impact in the context of conservation targets, if available.

When presenting the overview of the significance of impacts, the EAP must ensure that priority criteria do not get lost in the process of merging or combining of ratings to obtain an overall significance level. Consideration must be given to the inter-relationships between environmental elements in the evaluation of significance (e.g. potential "downstream" or "knock-on effects"). EIA team sessions should be convened so that impact significance can be determined on the basis of input from all specialists and the EAP. This assists in achieving an integrated approach to impact assessment as well as enabling linkages and inter-relationships between issues to be addressed. For example, the results of the MHI Risk Assessment are of relevance in answering concerns about health and safety risks to the community. Similarly, the visual impact assessment is relevant in terms of social impacts (e.g. sense of place).

Some factors or criteria that can be applied in assessing the significance of impacts are shown in Table 9. The potential changes in the environment are shown in the left hand column and the potential consequences for people are shown in the right hand column. This serves to demonstrate the links or dependencies between human systems and natural systems, where applicable. There may be many other relevant factors, depending on the project and its location.

TABLE 9: Factors or criteria for use in determining significance of negative impacts

CHANGES IN THE ENVIRONMENT	CHANGES FOR PEOPLE
• Deterioration of quality and/or quantity of the physical resources (surface water, groundwater, soil, land, and air).	• Negative effects on human health, well-being, quality of life • Expose people to hazards.
• Loss of or decline in agriculturally productive land.	• Threat to food security
• Loss of or decline in Critical Biodiversity Areas.	• Threat to ecotourism and nature-based recreational activities • Threat to the maintenance of ecosystem services
• Loss of or decline in commercial species	• Increase in unemployment • Shrinkage in the economy
• Loss of or decline in species used by local communities	• Threat to sustainable livelihoods • Decline in income generation opportunities
• Threat to rare or endangered species	• Threat to the maintenance of ecosystem services
• Reductions in species diversity or disruption of food webs.	• Threat to ecotourism and nature-based recreational activities • Threat to the maintenance of ecosystem services
• Loss of or damage to habitats, including habitat fragmentation.	• Threat to ecotourism and nature-based recreational activities • Threat to the maintenance of ecosystem services
• Obstruction of migration or passage of wildlife.	• Threat to the maintenance of ecosystem services
• Destruction of breeding habitat of faunal species	• Threat to the maintenance of ecosystem services
• Transformation of natural landscapes	• Decline in visual amenities (e.g., views) • Decline or loss of "sense of place."
• Decline in water resources (e.g. through over abstraction)	• Threat to the security of water supply for other water users
• Decline or changes in predator, large, or long-lived species	• Threat to the tourism industry
• Negatively affect groundwater recharge patterns	• Threat to the sustainability of water supply.
• Loss or degradation of rock or soil stability	• Threat to farming / agricultural potential

73

	• Threat to built structures
CHANGES IN THE ENVIRONMENT	**CHANGES FOR PEOPLE**
• Loss or degradation of unique geological features	• Threat to ecotourism and nature-based recreational activities • Decline in visual amenities (e.g., views)
• Negatively affect potential for restoration of degraded ecosystems.	
	• Loss or degradation of historical, archaeological, paleontological or architectural resources
	• Loss of or decline in areas used for community and cultural purposes.
	• Disruption of social networks and structures.
	• Detrimental change in the current use of lands and resources for traditional purposes by local communities.
	• Displace people or communities.
	• Threat to integration or coherence of communities.

Any impact that could result in the loss, decline or deterioration of biodiversity or natural ecosystems has the potential to impact negatively on local communities and society in general. This is because humankind is dependent on the multitude of resources and processes that are supplied by nature. Collectively, these benefits are known as ecosystem services. Based on the United Nations 2004 Millennium Ecosystem Assessment (MA), ecosystem services have been defined in terms of four broad categories:

- *provisioning*, such as the production of food and water;
- *regulating*, such as the control of climate and disease;
- *supporting*, such as nutrient cycles and crop pollination; and
- *cultural*, such as spiritual and recreational benefits.

The EIA must consider the environmental impacts with and without mitigation. In this respect, it must be borne in mind that the mitigation hierarchy must be applied (refer to Figure 4). This is in accordance with the NEMA principles. Besides principle 2(a)(viii) which states that negative impacts on the environment and on people's environmental rights must be **anticipated and prevented**, and where they cannot be altogether prevented, must be minimised and remedied, principles 4(a)(i)-(iv) make reference to **avoiding** impacts and where these cannot be avoided to minimising and remedying them. Thus development alternatives that show the highest level of avoidance of negative environmental impacts would be the most environmentally acceptable and sustainable, based on the NEMA principles.

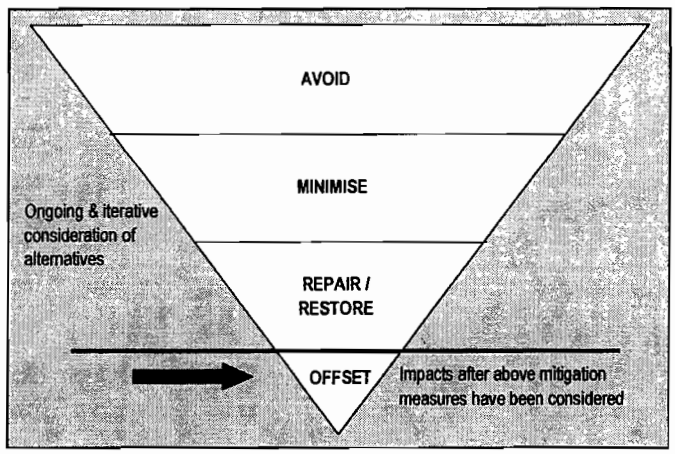


FIGURE 4: The mitigation hierarchy[119]

[119] Guideline on Biodiversity Offsets (Draft Edition 2, April 2007) – DEA&DP (Western Cape)

The NEMA principles are one of the primary tools for achieving sustainable development because they recognise that the consideration of environmental factors requires the integration of social, economic and ecological factors into decisions. They are applicable to all decisions that relate to the interpretation and implementation of NEMA and other laws concerned with environmental management or protection. It is therefore important that the EIA consider the NEMA principles for two key reasons:

- To determine whether the proposed development meets the "sustainability test", that is, does it represent a move away from or a move towards sustainable development.
- To enable the decision-maker to consider the development proposal in light of these principles, which they are obliged to do.

The primary principle is that development must be socially, environmentally and economically sustainable. The other principles flow from this and include the following:

- the social, economic and environmental aspects of activities, including their disadvantages and benefits must be considered, assessed and evaluated, and decisions must be appropriate in light of such consideration and assessment;
- the use and exploitation of non-renewable natural resources must be responsible and equitable, and must take into account the consequences of the depletion of natural resources;
- the development, use and exploitation of renewable resources and the ecosystems of which they are part must not exceed the level beyond which their integrity is jeopardised;
- a risk-averse and cautious approach must be applied, which takes into account the limits of current knowledge about the consequences of decisions and actions;
- negative impacts on the environment and on people's environmental rights must be anticipated and prevented, and where they cannot be altogether prevented, must be minimised and remedied;
- decisions must be taken in an open and transparent manner, and access to information must be provided in accordance with the law; and
- decisions concerning the environment must take into account the needs, interests and values of all interested and affected parties.

In summary, the EIAR needs to be presented in a manner that answers the following questions:

- What are the impacts and benefits?
- What is the significance of each impact and benefit and why?
- What criteria have been used to determine significance?
- What information or knowledge gaps are there in relation to the prediction of impacts?
- What risks and uncertainties are there in the prediction, assessment and evaluation of impacts?
- Can any of the impacts be avoided?
- Where impacts cannot be avoided, can they be minimised and if so, to what extent?
- Are mitigation measures to minimise impacts known to be effective or are there uncertainties?
- What are the residual impacts (impacts remaining after mitigation)?
- Which alternative would be most appropriate from an impacts and benefits perspective?
- Can the development proposal be considered to be consistent with the NEMA principles?
- In terms of social aspects, which communities and/or individuals stand to gain and which stand to lose? For those that stand to gain, what will they gain and at what cost to other members of society and the environment?
- Does the project (with mitigation) conform to the objectives in adopted environmental plans and community goals?