



Integrated Environmental Management Information Series

*Linking Environmental Impact Assessment
&
Environmental Management Systems*



Department of
Environmental Affairs and Tourism

Other topics in the series of overview information reports on the concepts of, and approaches to, integrated environmental management are listed below. Further titles in this series are being prepared and will be made available periodically. Sequence of release and titles are subject to change.

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Information Series 18:	Environmental Assessment of Trade Related Agreements and Policies in South Africa
Information Series 19:	Environmental Assessment of International Agreements
Information Series 20:	Linking EIA and EMS
Information Series 21:	Environmental Monitoring Committees

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SUMMARY

Environmental Impact Assessment (EIA) and Environmental Management Systems (EMSs) are both well known and well used environmental management tools in South Africa. The two tools are briefly introduced and their legal and policy status explained. The relationships and linkages between the two are discussed and the respective environmental information threads which link the two are explained. The tools are well used on their own but they are not often linked to the extent where they could effectively carry through important environmental information generated in one process (such as the EIA) and ensure that the lessons learned are implemented and systemised in the management structure (the EMS).

EIAs are a regulatory tool in South Africa but that is not yet the case for EMSs. The main types of EMSs are briefly discussed and an international perspective is given on EMSs, along with a brief history of their development. The question of whether the EIA or the EMS should come first is addressed, although as with the "chicken and egg-what comes first?" analogy, either can come first, depending upon the circumstances and preference.

The value and importance of integrating EIA and EMS is illustrated using a project life cycle model, and by contrasting the different characteristics within each process. In order to make the connection with commerce and industry, the processes are linked to parallel business systems and models to show that both processes provide valuable information and inputs into business decision-making. By cross linking the EIA, the EMS and business management systems and their sub-components, it is possible to see how controls, monitoring mechanisms, quality controls and performance measuring processes can benefit from the additional environmental information streams coming from the EIA and the EMS.

The document sets out to introduce some basic ideas and concepts regarding integration of EIA and EMS. Readers are guided and encouraged to further information, background and detailed examples through additional references, reading and up-to-date websites.

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1. PURPOSE OF DOCUMENT

The purpose of this document is to demonstrate the vital links between Environmental Impact Assessment (EIA) and Environmental Management Systems (EMSs) and the importance of ensuring that the information and findings and decisions coming from an EIA are fully incorporated into the formal or informal EMS that is associated with the permanent structures or arrangements of the site, project or programme.

There is a temptation to try and decide what comes first, the EIA or the EMS. In the case of a “greenfields” development, the EIA will guide the development of a project through planning, construction, operation and, theoretically, decommissioning. The implementation tool for the EIA, its findings, and its recommendations is the EMP (Environmental Management Plan). (For further information on this, see DEAT (2004), Environmental Management Plans, No 14)

An EMS will then exist for the completed project, which will draw lessons and inputs from the EIA. Ideally, the development of the EMS would have commenced at the same time as the EIA. The EMS would then mature and develop as information from the EIA is incorporated. In the case of an existing project which, for example, needs to expand, an EIA is required for the expansion. That EIA will be guided by the site EMS and the scope and brief of the EIA will be guided by the existing environmental conditions that are managed and monitored by the EMS.

In some cases, the EMS will already exist in the organisation. In this case, EMS procedures will usually dictate when the EIA is undertaken and how it will be carried out. The EMS is also integrated with the organisation’s other management and decision making systems which guide planning and development and thus ensure that existing environmental knowledge is incorporated into project thinking and new environmental knowledge, arising from the EIA process, is interlinked with business and policy priorities.

Both EIA and EMS are discussed in context of their respective uses and illustrates how integration between the two can occur. Reference is also made to the other IEM Information Series documents that can supplement the information provided here.

In the following section, a brief introduction to EIA and EMS and the need to link these two tools is provided. The legal and policy status of EIAs and EMSs in South Africa is described in Section 3, while international perspectives on the link between these tools is described in Section 4. The way in which EIA links to EMS, the complementary characteristics of these tools and their linkages in the business context, are described in Section 5. The practicalities of linking EIAs and EMSs are discussed in Section 6 and the document is concluded in Section 7.

2. INTRODUCTION

EIA and EMSs are both well known and well used environmental management tools in South Africa. EIA is a legislated tool used to assess the positive and negative environmental impacts of a proposed project and its alternative options; and to propose measures to mitigate its potential negative impacts and enhance the positive impacts. EIA aims to assist the authorities in deciding whether the proposal is economically, socially and environmentally sustainable. The EMS is the structure and framework used to manage environmental impacts on a continuous basis. In theory the information generated through the EIA enables the formulation of the EMS through which the impacts during implementation are to be managed.

In practice, however, EIAs and EMSs are often used in isolation and the benefits of integrating the two are lost for many organisations. It could be argued cynically that for many, the EIA and the EMS are merely a means to an

end, i.e. getting a contract or satisfying the requirements of a piece of legislation. That may be the case in some circumstances, but increasingly, organisations are finding that the EIA and the EMS add value to business processes and reduce business risk.

“...if EIA is treated merely as a means of obtaining a permit for a development to proceed, then much work and potentially useful information generated will be wasted...”
(WBCSD, 1996)

3. LEGAL AND POLICY STATUS OF EIAs AND EMSs IN SOUTH AFRICA

EIAs have formed a part of the Integrated Environmental Management (IEM) process, which has been a part of the South African environmental management “scene”, since the early 1980s. “The IEM Information Series 0 - Overview of Integrated Environmental Management” provides a more detailed review and history of IEM. It is difficult to find formal reference to EMS in early environmental policy and legislation in South Africa. The most significant references only emerge after the establishment of the ISO 14000 series from 1996 onwards.

3.1 EIAs

Environmental Impact Assessment, through the documents known as Scoping and Environmental Impact Reports, has formed part of the “EIA Regulations” promulgated in terms of the Environment Conservation Act No 73 of 1989, as amended, since 1997. (Environmental assessments have, however, been undertaken extensively, especially for larger projects, since the 1970’s. (Glazewski, 2000)

These documents have been the basis for authorisations that have been issued, along with “Records of Decision” (RoDs), by the national Department of Environmental Affairs and Tourism (DEAT) and the nine Provincial Departments, delegated to administer the EIA regulations in their various provinces.

When discussing some of the earliest Scoping and Environmental Impact Reports with applicants (also known as “proponents”), it becomes clear that in many cases, the reports were a means to an end and once authorisations were given by the authorities, the reports were filed and more often than not, forgotten. Any conditions that may have been associated with the authorisations were also often forgotten. The reasons for this are simple. At the time, the authorities had limited manpower and resources available to follow up on compliance with authorisation conditions. If the conditions were implemented, measurement and monitoring systems were rarely in place to track progress (for internal or external review), often making auditing of the conditions, very difficult and unenforceable.

In recent years, capacity within the various departments has developed with the result that enforcement and monitoring of RoDs has begun to increase. However, only in a few cases, would self-regulatory tools (such as conditions requiring annual, independent auditing of RoD conditions) be added to the authorisation requirements. The benefits to the regulators of self-regulatory tools are that the proponents carry the cost of enforcement monitoring.

Outside of the mining sector, there is no evidence of authorities in South Africa formally requiring EMSs to be established after an EIA has been carried out. This may be because of a wariness of possible legal action from proponents who might suggest that the legal requirement for an EMS is ultra vires, or outside of the scope of the legislation at the current moment.

3.2 Environmental Management Systems (EMSs)

Currently there is no legal requirement for EMSs to be put into place, other than where it may have been made a condition of a permit or licence application. However, the natural progression of environmental management enforcement and compliance suggests that future legal controls on commerce and industry may include the requirement for EMSs to be part of a mechanism to monitor and measure legal compliance.

3.2.1 Types of EMSs

There are a number of different types of EMSs which are commonly used. The main types are discussed below but it must be recognised that there are many different types of informal EMSs which have been specifically tailored to the needs of smaller operations and organisations. Many of these are the first manifestations of environmental organisation and structure, some of which will evolve to more formal frameworks.

3.2.1.1 ISO 14001

The ISO 14001 EMS standard is probably the most visible EMS in existence at the present time and it is the EMS Standard for which there are the most formal certifications. There are over 66,000 companies and organisations with ISO 14001 certifications in 113 countries around the world, as at December 2003 (ISO, 2004a). Whilst certification to the ISO 14001 standard is an important goal, many organisations only "align" to ISO 14001, without formally certifying. Suppliers to ISO 14001 certified companies are not formally required to also seek certification to conform to the standard but they are required to comply with the procedures of an ISO 14001 certified company.

The 18 core sections in the EMS standard link to the ISO 9000 Quality Management Standard and thus provide a logical route into, for example, the manufacturing process. The appropriate link to EIAs should be via the Aspects and Impacts Register that certified companies will normally have established. This enables the EIA practitioner to establish current environmental priorities and significances and relate those to the proposed project or programme which is the subject of the EIA.

As this publication goes to press, there is news of a revised ISO 14001 and 14004 standard which has been published. The new standards, ISO 14001:2004 and ISO 14004:2004 have improvements which are based upon feedback from users. (ISO 2004b).

For many, the credibility of an organisation using ISO 14001 as its EMS is the formal certification which includes regular certification body surveillance audits to check compliance as a part of re-certification. This activity formally recognises the EMS standards in the organisation as complying with uniform standards that are globally accepted. Many organisations chose not to certify, but "align", to the standard.

It is argued by some that certification only makes business sense (i.e. the costs can be justified) when it is specifically related to either a legal requirement or a business decision. (e.g. a customer requires ISO 14001 certification as a pre-condition to doing business.) Certification is a business decision and that business could be informed either by a financial prerogative or commitment via an organisational or corporate policy.

3.2.1.2 Eco-Management and Audit Scheme (EMAS)

Although not strictly speaking an EMS, it does include EMS aspects and functions in a similar fashion to an EMS. EMAS was developed before the advent of the ISO 14000 series. The presence of an EMS was implicit in EMAS and the advent of ISO 14001 meant that the standard could be recognised as a step towards EMAS registration, whereas prior to this, EMSs had to be developed. EMAS is generally

regarded as a stricter structure than ISO 14001, requiring specified audits, greater public availability of information and greater performance improvement. EMAS is a voluntary scheme that was primarily developed for use within the European Union. There are currently 4050 sites in 3072 EMAS registered organisations. (Europa, 2004)

4. INTERNATIONAL PERSPECTIVES ON EIAs AND EMSs

4.1 International Standards and Perspectives

Environmental Impact Assessments (EIAs) have been an accepted part of international practice related to development and project planning and development financing since the late 1970's when the USA first instituted Environmental Assessments in terms of the US National Environmental Policy Act (NEPA). Most industrialised nations around the world have legislation in place that requires environmental impact assessment in one form or another.

Environmental Management Systems (EMSs) have been around in an informal guise for over 50 years but formal environmental management systems only date back to the first formal EMS, British Standard 7750, which was published in 1992 and shortly followed by its international successor, ISO 14001, in 1996.

International norms and standards are dictating that environmental and sustainability factors be incorporated into business and financial affairs. The Equator Principles, first adopted by ten leading banks from seven countries on 4th June 2003, drawn up by the international banking and investment sector, require that environmental and sustainability assessments must be undertaken for all major projects requiring loans.

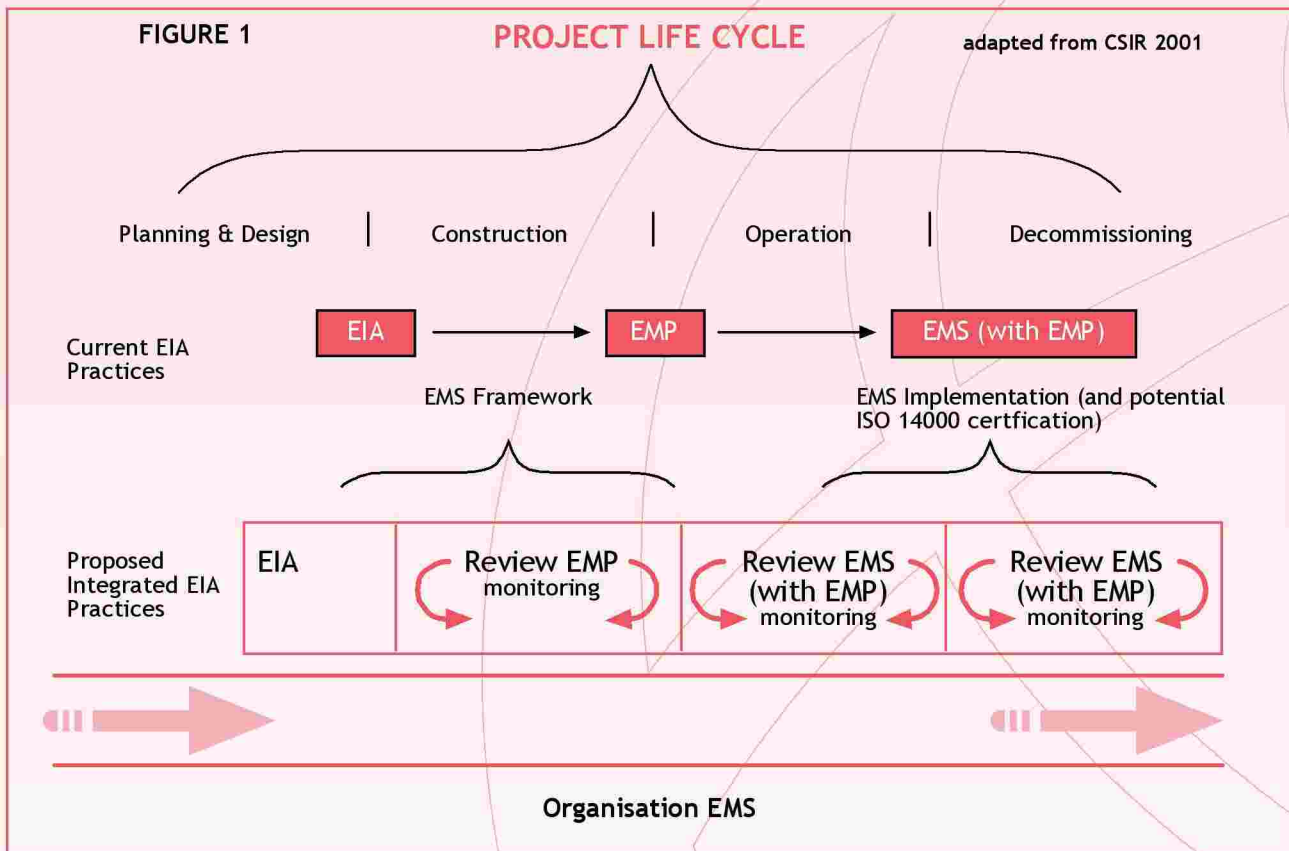
The World Bank Group has a detailed set of environmental, health and safety requirements (International Finance Corporation (2004)), which include provision for Environmental Assessments, which must be complied with as a condition of loans being made. (World Bank 1998b, International Finance Corporation, 1998) These same guidelines are referred to in the Equator Principles. Whilst not specifically requiring EMSs, the World Bank supports in principle the concept of EMSs and recognises their value in achieving improvements in environmental performance and maximising benefits from investments in hardware. (World Bank 1998a)

Demonstration of the long term viability and sustainability of projects and, in some cases, the establishment of some form of an EMS, may be a condition of the loan so regular environmental, social and sustainability audits are undertaken as a part of the monitoring conditions associated with the loan. Environmental conditions in loans also ensure that the basis for sustainable environmental management is built into projects through inclusion of adequate environmental budgets, organisational commitment to implementing environmental management and linking organisational "Image" to sound environmental practices. The integration of EIA and EMS makes sense, as the EIA forms part of the feasibility process which indicates the risk associated with the project and loan, and the EMS provides the lender with the ability to monitor the outcome of the loan and ensure that risks remain acceptable. From an international perspective, EIA and EMS are integrated and form an important part of the risk management process for international commerce and industry.

5. Where EIA fits with the EMS

The relative relationships between EIA and EMS in a project context and in an existing systems context are illustrated in figure 1. At the same time, it also attempts to show how the project life cycle is a small part of a much wider organisational structure. The project life cycle and the EIA are a microcosm of the wider organisational function, represented by the organisational

EMS, which itself is integrated into the wider decision-making and management structures of the organisation. The key thread that runs through all of the processes is the, all important, monitoring and review. Evolution and change are detected by the monitoring and review processes in the project life cycle EIA and the EMP, and are routed back to the wider management system in a feedback loop which modifies actions and reactions.



In an industrial situation, it is rare for the above theoretic model to be implemented as completely, or in as integrated a manner, as depicted above, in an industrial situation. Although companies are increasingly recognising the value and organisational learning coming from implementing EIA recommendations and dealing with environmental practicalities through EMPs. In the absence of strong environmental leadership from the head of the organisation, often there is a tendency in companies to develop "silos" of actions, linked to organisational politics, corporate cultures and "empires" creating isolated actions and programmes which function autonomously and do not communicate effectively. The result is that the lessons learned from EIAs do not always end up in organisational EMSs and vice versa.

5.2 Complementary Links

EIA and EMS could be said to fit together like a hand in a glove. The best way to illustrate this is to compare the characteristics of the two environmental management tools and show how they complement each other. The best known formal manifestation of an Environmental Management System is ISO 14001, the International Standard for environmental management systems (SABS ISO 14001:1996). A comparison of the EIA process with the parallel elements in the ISO 14001 structural format is presented in Table 1.

¹ Documents which record conditions of approval for EIAs which form the basis of auditing legal compliance, once the project is implemented.

**Table 1 : How EIA and EMS can complement each other
(bracketed comments refer to the South African Context)**

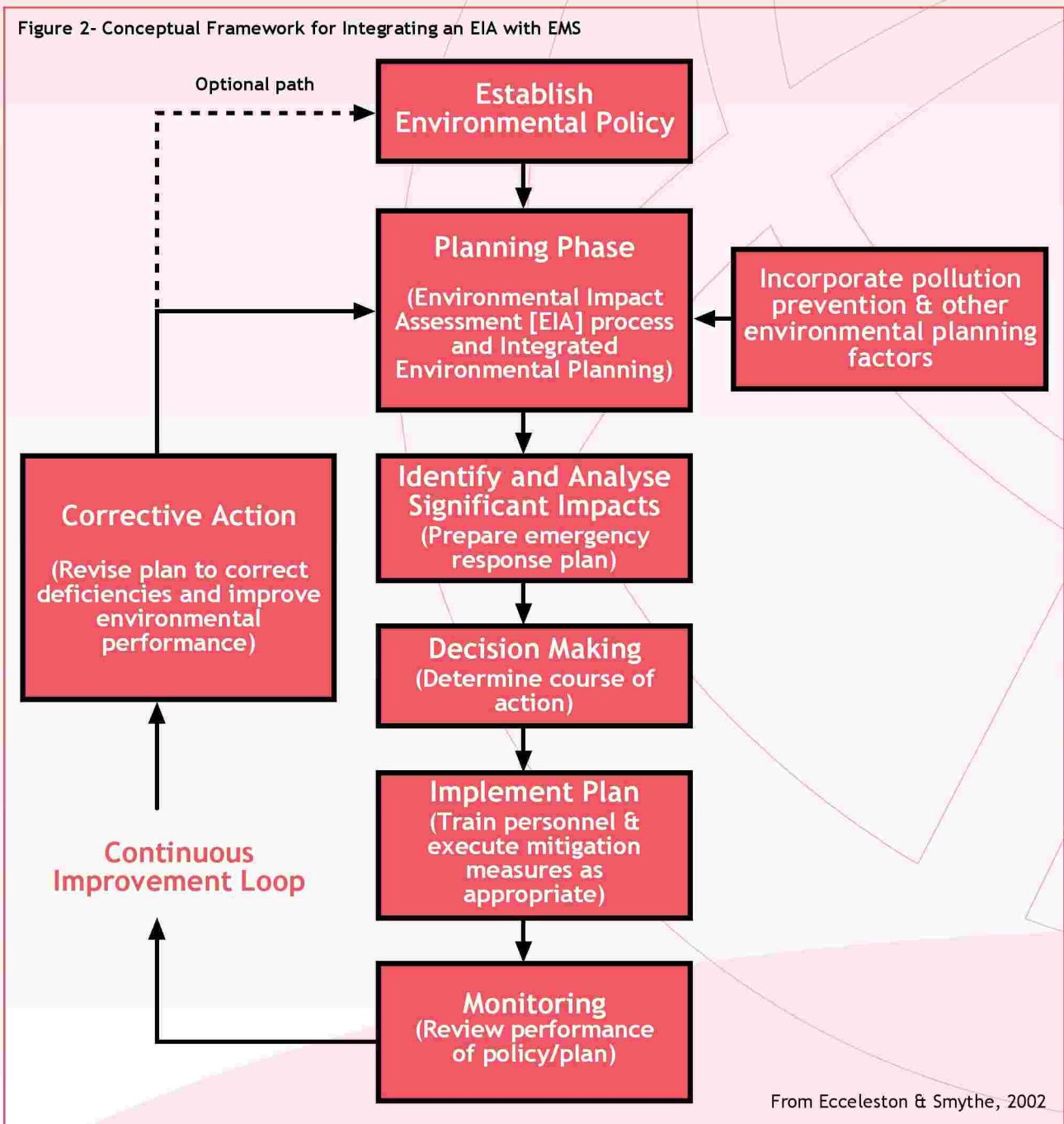
Characteristics	Typical EIA processes	ISO 14000-consistent EMS
Goal	The goal of an EIA is generally to ensure that environmental factors are considered during the planning process. (The environmental factors will go on to be incorporated into the EMS.)	ISO 14000's goal is to ensure that environmental aspects and impacts are identified and managed. The continuous improvement requirement is used to reduce impacts. (The environmental factors will become a part of the environmental aspects and impacts in the system.)
Mandate	The EIA process is driven by a legal mandate to protect the environment with conditions of approval through the RoD.	Substantive actions are expected to be taken, which lead to continual improvement in environmental protection. (Conditions in the RoD will become a part of the legal compliance structure within the EMS.)
Planning function	A comprehensive environmental planning process is often followed, but it typically lacks an environmental quality system for ensuring that the decisions are properly implemented. (Legal compliance auditing will ultimately correct this.)	A planning function requires a system for ensuring that decisions are appropriately implemented. However, it does not prescribe a detailed process for performing the planning function. (An internal and external audit process will however, ensure quality checks and balances.)
Public Participation	A detailed formal public participation process for identifying significant impacts and eliminating non-significant issues is generally specified. (Public scoping is an important part of identifying and incorporating priorities.)	A procedure (not public) is required to record and respond to external parties, but it does not include specific steps for public involvement. (However, more organisations are voluntarily producing environmental and sustainability reports.)
Other environmental requirements	Other environmental review processes and objectives such as waste minimisation, pollution prevention, biodiversity and species protection are either required to be integrated with the EIA or may be done so voluntarily. (Also included is risk assessment, alternatives, and cumulative impacts.)	A top level environmental policy is required, including an on-going commitment to prevent pollution, which is often very broadly defined. The policy does not always specifically address integration of the EMS with other laws and policies. (Certification surveillance audits will look for evidence that EIA information has been incorporated into the EMS.)
Life Cycle	An analysis of "reasonably foreseeable" impacts over the life cycle of the action is typically required. (Though in South Africa, Life Cycle Analysis is infrequently undertaken.)	Details of how to perform a life cycle analysis (LCA) are described in the ISO 14040 standard.
Impact assessment requirements	EIA processes often include detailed directions for performing an analysis of direct, indirect, and cumulative impacts. (Legal flexibility enables best practice to be incorporated, where appropriate.)	An investigation of "environmental aspects" is required. However, the requirements for performing this investigation generally lack specificity regarding the scope or content. (However, certification and surveillance audits will often question scope and content.)
Accumulated environmental experience	Many years of experience have been accumulated in the planning and analysis of significant environmental impacts through different EIA processes worldwide. (South Africa has accessed considerable external EIA experience.)	This is a relatively new process. Only limited experience has been accumulated in the planning and analysis of significant environmental issues. (However, the speed at which the process has spread globally has caused significant cross-pollination of ideas and experiences.)
Significance	Specific factors for determining the significance of the environmental impacts are frequently specified in the EIA guidance documents or other relevant regulations.	No detailed direction for interpreting or determining the meaning of "significance" is provided. (Significant impacts can be readily drawn into the impacts and aspects process.)

Characteristics	Typical EIA processes	ISO 14000-consistent EMS
Mitigation	Mitigation measures are generally required to be identified and analysed as part of the EIA planning process.	EMS provides a system for ensuring that mitigation measures are implemented during the functioning of the project, policy or operation.
Monitoring	EIA processes frequently encourage (but infrequently require) post-monitoring measures. (RoD compliance auditing will highlight conditions and requirements.)	Monitoring is mandated as part of the continuous improvement cycle. (RoD requirements can be readily incorporated into the EMS.)
Continual improvement	Most EIA processes lack a specific component for continually improving quality.	A continuous improvement process is a basic concept in an EMS.

Adapted from Ecclestone and Smythe, 2002

The table above illustrates the complementary links between EIA and EMS but without seeing the structure and framework of those links, it is easy to be distracted by the differences in terminology. Understanding of the way in which EIAs and EMSs integrate can best be illustrated by "layering" the links through a diagram. Figure 2 below is an overview of a typical EMS and an EIA which has been slotted into the diagram. The bold text relates to the EMS and the bracketed text is the "overlain" EIA.

Figure 2- Conceptual Framework for Integrating an EIA with EMS



From Ecclestone & Smythe, 2002

Whilst having a formal environmental management system such as ISO 14001, which is a preferred option, other systems can also be used, if they include the necessary environmental prerequisites to meet minimum environmental requirements. Those prerequisites should have long term objectives which include:-

- * Ensuring continuing compliance with legislation and company environmental policy;
- * Achieving, enhancing and demonstrating sound environmental performance;
- * Ensuring environmental issues continue to be integrated into business decisions;
- * Rationalising and streamlining environmental activities throughout the lifetime of the development to add value and efficiency;
- * Encouraging and achieving a high level of environmental performance and response from all employees, contractors and suppliers;
- * Providing the standards for overall environmental planning, operation, audit and review; and
- * Enabling management to establish environmental priorities.

In the absence of a formal system to integrate the results of the EIA, a plan should be developed to accommodate them which describes the following:-

- * The environmental objectives and commitments;
- * The means by which this will be achieved;
- * The responsibilities and accountabilities;
- * The procedures for dealing with changes and modifications to the project;
- * The corrective actions to be employed should the need arise; and
- * Review schedules and criteria.

(adapted from WBCSD, 1996)

In the case where a formal EMS is in place, an Environmental Management Plan (EMP) can be used as the means to take the findings and recommendations of the EIA into the system, structure and procedures of the EMS. (Further detail on EMPs can be found in the IEM Information Series 12, Environmental Management Plans)

6. THE PRACTICALITIES OF LINKING EIAs AND EMSs

In the section that follows the practicalities of linking EIAs and EMSs are discussed in terms of: the benefits in South Africa; data accuracy; auditing within EIAs and EMSs; decision-making; legal compliance and conformance and the benefits for international trade.

6.1 Usage in South Africa

Both EIAs and EMSs are now well used in South Africa. The challenge is to increase awareness amongst planners, project proponents, environmental practitioners, environmental control officers and environmental managers of the importance of integrating EIAs and EMSs to ensure a seamless flow of information between the two.

Some of the major benefits of integrating EIA and EMS can be summarised as follows:-

- * More cost effective use of environmental information generated during the EIA;
- * Deeper involvement of public participation and communication initiatives from project initiation (EIA) to ongoing checks and balances (EMS)
- * Ensuring better management of South Africa's environmental assets through formal systems of monitoring, measurement and management;
- * More effective and transparent demonstration of legal compliance;
- * Better progression towards life cycle management of activities through the seamless movement of environmental information from data collection and planning to implementation and management.
- * More efficient mechanism to ensure RoD compliance, monitoring, and auditing.

- * Long-term opportunity to determine whether the impact predictions are valid, thereby adding value to future EIAs.

6.2 Auditing within EIAs and EMSs

Generally, auditing within EIAs is not carried out as effectively as it is in EMSs. EMS auditing involves both an internal and external component which creates a higher degree of confidence in the information, reduces potential risks, and reduces the potential for errors. (Further information on environmental auditing can be found in IEM Information Series 14 - Environmental Auditing).

EIAs that are to be linked to EMSs need to have sound monitoring, data checking, reviewing and auditing systems, to ensure that errors are not magnified as they pass through the system. Peer review and data checking are normally carried out in EIAs but, in some instances these activities are the first to be affected by budget cuts. Quality controls must be maintained to protect the integrity of the EIA findings and recommendations as they pass through to the EMS.

As with all environmental management tools, accurate data are of paramount importance. Checking methods and systems are needed in both tools to ensure that the information being used is accurate, and will not corrupt or distort management decisions which can have wider implications for the project or operation.

It is only fairly recently that there has been an increase in the requirement for auditing of conditions contained within an RoD. The results from the RoD audit can be drawn into the EMS and can become part of the wider and regular EMS systems and compliance auditing schedules and structures.

6.3 Decision making, Legal compliance and Conformance

The value of integrating EIAs and EMSs will be maximised if government authorities at local and provincial levels coordinate their planning, development, monitoring and enforcement activities to make the most effective use of the environmental information as it flows through the two environmental management tools. Compliance with environmental legislation is checked routinely through the mechanisms of the companies' EMSs. By comparing and tracking this with the data that are supplied in the EIA, it becomes possible to not only cross-check data but also to predict impacts, based in EIA data and EMS data and systems indications.

By coordinating environmental priorities and concerns that are generated from, for example, the municipal Integrated Development Plans (IDPs), the emerging Water Catchment Management Plans, and provincial conservation planning priorities, it is possible to use EMSs as policy and legal compliance tools. EMSs can then become cross-checking mechanisms for the data and plans submitted to the authorities (i.e. the Integrated Development Plans, Catchment Management Plans, etc).

Furthermore, encouragement of the development of EMSs in public and private sector activities will improve the ability to monitor compliance. By carefully planning coordinating conditions in RoDs, it will be possible to reduce government compliance and enforcement costs by moving the measurement and monitoring focus back to the "generators", reflecting a "polluter pays" mode of management. Data produced by the generators will be cross-checked through systems audits of EMSs and monitoring and reporting of RoD compliance.

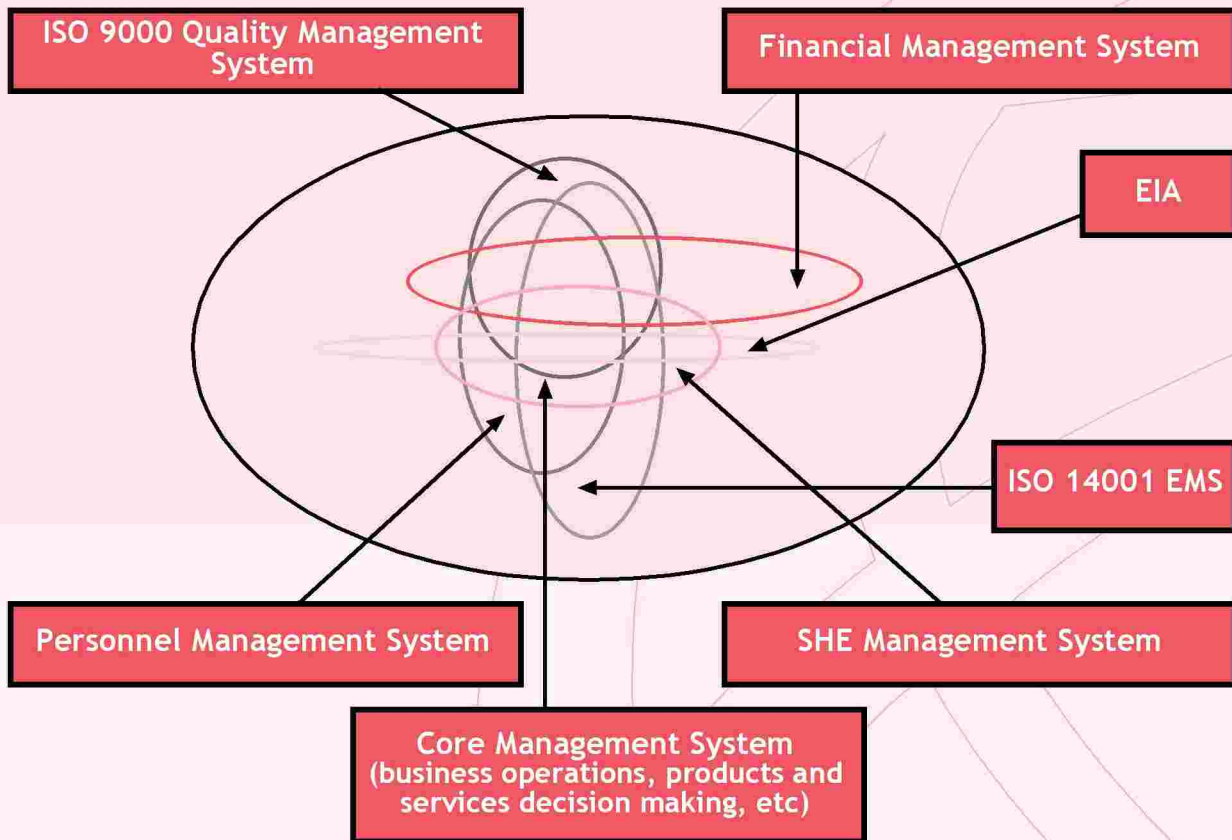
6.4 Linking EIA and EMS to "the business of doing business"

It is very important to "sell" the benefits of EIA, EMS, and integrate the two, to business management and decision makers. In the case of many business organisations, an EIA is undertaken simply to comply with legal requirements.

Once approval has been acquired, the EIA may be filed and never looked at again. Similarly, business organisations with operating EMSs do not always make the best use of EIAs that are undertaken for expansion projects. The environmental information generated from the EIA needs

to be integrated with the existing EMS, or if there is not one in place, it should be integrated into a company management system (such as the finance management system or the Quality Management System).

Figure 3: Graphic Representation of Linkages between various management systems and an EIA



The various specialised management systems overlap in at least one common area (Figure 3). Note that the EIA also cuts right through the middle of all of the systems because it affects all the business management systems in one way or another. The EIA will often draw information from various departments in an organisation and by posing questions about the environmental aspects within the differing departments, cause a rethinking of approaches in the light of environmental perspectives. This then becomes one of the drivers of change in an organisation. Although this should result in positive improvements, it is not uncommon for Departmental Managers of these various systems to try and divorce themselves from the EIA (and the environmental management system) on the basis that "it doesn't affect us".

The EIA and the EMS can easily provide many business opportunities which can enhance the effectiveness of the organisation. These can include "environmental" angles on products, a new environmental image or credibility, a reduction or improvement in environmental risk management, greater opportunities for export markets, better understanding of environmental features of product or process life cycle and better understanding of environmental costs (direct and indirect).

6.5 Benefits for international trade

Environmental management has become a key component in international trade. Some argue that other countries are using environmental issues as a basis for new trade barriers. Many international buyers will insist on evidence of certified environmental management systems and procedures being in place before they even consider doing business with overseas suppliers. In some cases, these international buyers may even commission supplier audits to check systems are in place. These audits will also explore environmental studies and reports that have been undertaken to ensure that actual and potential environmental liabilities have been adequately addressed through, say an EIA, and that the business's EMS is following through on findings and recommendations.

Assurance comes from clear indications, for example through audit document trails, that environmental issues have been identified through EIAs and subsequently incorporated in existing EMSs, or triggering the development of EMSs to accommodate effective and on-going management of those environmental issues. There is no doubt that this assurance is needed to satisfy EMAS requirements, and to a lesser degree, ISO 14001 requirements of the international companies buying the products and services.

South African companies that trade internationally have indicated that having sound, auditable environmental systems in place is an advantage in doing business with European and North American companies. The European Union has taken over from North America as the main driving force in introducing more environmental and sustainability regulations. Environmental assessment is an important tool in helping to assess the environmental implications of certain business proposals and these, when translated and integrated into the EMS, aid the business in meeting the environmental and sustainability requirements of international customers. Many potential overseas customers will ask for evidence that EIAs have been undertaken and that some form of EMS (preferably ISO 14001) is in place. Being able to demonstrate seamless linkages between EIAs and EMS is a strong indicator that sound environmental management is being practiced.

The criteria being used to test broader environmental integration into economic sector activities is illustrated in Table 3. The principles also apply at a higher sectoral level where companies working through sectoral associations aim to improve environmental performance as a part of corporate governance principles. The questions asked below illustrate how simple EMS issues can apply to national and international policies and standards.

Table 2: Criteria for assessing Environmental integration into Economic Sector Activities (Schepelmann, 2000)

Institutional Integration	
1.	Are environmental objectives (e.g. maintenance of natural capital and ecological services) identified as key sectoral objectives, and as important as economic and social objectives in a sectoral integration strategy?
2.	Are synergies between economic, environmental and social objectives maximised?
3.	Are trade-offs between environmental, economic and social objectives minimised, and transparent?
4.	Are environmental targets (e.g. eco-efficiency) and timetables agreed? And are there adequate resources allocated to achieve the targets within timetables?
5.	Is there effective horizontal integration between the Sector; Environment; and other key authorities, e.g. Finance and Planning?
6.	Is there effective vertical integration between EU, national, regional and local administrations, including adequate public and other stakeholder information and participation measures?
Market Integration	
7.	Have environmental cost/benefits been internalised by common methodologies?
8.	Have environmental costs been internalised into market prices through market-based instruments?
9.	Have revenues from these market based instruments been directly recycled to maximise behaviour change?
10.	Have revenues of these market based instruments been directly recycled to promote employment?
11.	Have environmentally damaging subsidies and tax exemptions been withdrawn or refocused?
12.	Have incentives been introduced which encourage environmental benefits?
Management Integration	
13.	Have environmental management systems (EMS) been adopted?
14.	Is there adequate strategic environmental assessment (SEA) of policies, plans and programmes?
15.	Is there adequate environment impact assessment (EIA) of projects before implementation?
16.	Is there an effective "green" procurement (supplies) programme in public and private institutions?
17.	Is there an effective product and services programme that maximises eco-efficiency (e.g. via demand side management; eco-labelling; "products to services", etc.)?
18.	Are there effective environmental agreements that engage stakeholders in maximising eco-efficiency?
Monitoring/Reporting Integration	
19.	Is there an adequate sector/environment reporting mechanism that tracks progress with the above objectives, targets, and tools?
20.	Is there effectiveness of the policies and tools for achieving integration evaluated and reported, and the results applied?(sic)

7. CONCLUSION

Lack of coordination and communication is probably the main reason why linkage between EIAs and EMSs has not occurred more effectively in the past. The improvements in the National Environmental Management Act No 107 of 1998, will enable better coordination of environmental and sustainability activities between the various tiers of government to emerge, as well as improved environmental management of the entire life cycle of projects, policies and programmes.

Greater focus on holistic environmental management thinking, which recognises the importance of effective information and data flows for environmental decision-making purposes, will see the natural benefits of integrating EIA and EMS.

South Africa is increasingly participating in the global marketplace where competition is more complex than simply giving the best price. EIAs and EMSs are common integrated components of international commerce and trade and there is no choice as to whether they are needed or not needed. They must form a part of the business process in any international trade in the 21st Century.

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WEBSITES

Eco-Management and Audit Scheme (EMAS)

This is the primary European Union site for information on EMAS and contains useful information and references.
<http://europa.eu.int/comm/environment/emas/>

Environmental Management System Self-Assessment

This is a downloadable checklist document and Adobe Acrobat format which enables readers to assess their organisations' conformance to ISO 14001 - Environmental Management System standard. Whilst not a precise tool, it does provide useful insights and perspectives and is produced by the Global Environmental Management Initiative (GEMI)
http://www.gemi.org/ISO_111.pdf

Equator Principles

The Equator principles are a voluntary set of guidelines for banks and investment houses for managing social and environmental issues relating to the financing of development projects. A website exists with the Principles, associated guidelines and processes and signatory members' details.
<http://www.equator-principles.com>

IAIA Index of Environmental Impact Assessment Sites

The International Association of Impact Assessment (IAIA) has compiled an extensive list of Internet website relating to impact assessment. The sites have been checked and the list includes a short description of each one. An attempt has been made to cover as wide a range of topics on impact assessment as possible. (This is a LONG list..)
<http://www.iaia.org/eialist.html>

INEM Environmental Management Tool Box

This is a useful "toolbox" of resources developed by INEM (International Network for Environmental management) to assist individuals and organisations with environmental management, and EMSs.
http://www.inem.org/htdocs/inem_tools.html

International Standards Organisation

This is the main site of the International Standards Organisation where detailed and up to date information can be obtained on the ISO 14000 EMS series, as well as other linked standards such as ISO 9000:2000.
<http://www.iso.org>

ISO 14001 Environmental Management Standard

This is a easy access, user friendly site which provides wider insights and downloadable resources on the environmental management system standard, ISO 14001, as well as many of the other standards in the 14000 series.
<http://www.iso14000-iso14001-environmental-management.com>

Southern African Institute for Environmental Assessment (SAIEA)

EIAs are identified as a key planning tool in the SADC Sustainable development Strategy and the Southern African Institute for Environmental Assessment was established in 2001 to support public and private sector institutions involved in EIA and to overcome capacity gaps in the SADC region. The website provides useful resources, contacts and networks on EIA in the SADC region. A book entitled "Environmental Impact Assessment in Southern Africa" can also be downloaded from the site.
<http://www.saiea.com/html/publications.html>

UNEP - Environmental Management Tools - Environmental Impact Assessment

This is one of UNEP's environmental assessment sites and contains links to their publications on the topic as well as links to sections on EMS, Life Cycle Assessment, and Reporting.
<http://www.uneptie.org/pc/pc/tools/eia.htm>

US Environmental Protection Agency - Environmental Management Systems This is a very useful primer on EMS as it provides insights to EMSs and why they should be developed, as well as downloadable tools and resources for large and small organisations.
<http://www.epa.gov/ems/>

GLOSSARY

Definitions

Affected Environment

Those parts of the socio-economic and biophysical environment impacted on by the development.

Affected Public

Groups, organizations, and/or individuals who believe that an action might affect them.

Alternative proposal

A possible course of action, in place of another, that would meet the same purpose and need. Alternative proposals can refer to any of the following but are not necessarily limited thereto:

- * alternative sites for development
- * alternative projects for a particular site
- * alternative site layouts
- * alternative designs
- * alternative processes
- * alternative materials

In IEM the so-called "no-go" alternative also requires investigation.

Authorities

The national, provincial or local authorities, which have a decision-making role or interest in the proposal or activity. The term includes the lead authority as well as other authorities.

Baseline

Conditions that currently exist. Also called "existing conditions."

Baseline Information

Information derived from data which:

- * Records the existing elements and trends in the environment; and
- * Records the characteristics of a given project proposal

Decision-maker

The person(s) entrusted with the responsibility for allocating resources or granting approval to a proposal.

Decision-making

The sequence of steps, actions or procedures that result in decisions, at any stage of a proposal.

Environment

The surroundings within which humans exist and that are made up of -

- i. the land, water and atmosphere of the earth;
- ii. micro-organisms, plant and animal life;
- iii. any part or combination of (i) and (ii) and the interrelationships among and between them; and
- iv. the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being. This includes the economic, cultural, historical, and political circumstances, conditions and objects that affect the existence and development of an individual, organism or group.

Environmental Assessment (EA)

The generic term for all forms of environmental assessment for projects, plans, programmes or policies. This includes methods/tools such as EIA, strategic environmental assessment, sustainability assessment and risk assessment.

Environmental consultant

Individuals or firms who act in an independent and unbiased manner to provide information for decision-making.

Environmental Impact Assessment (EIA)

A public process, which is used to identify, predict and assess the potential environmental impacts of a proposed project on the environment. The EIA is used to inform decision-making.

Fatal flaw

Any problem, issue or conflict (real or perceived) that could result in proposals being rejected or stopped.

Impact

The positive or negative effects on human well-being and/or on the environment.

Integrated Environmental Management (IEM)

A philosophy which prescribes a code of practice for ensuring that environmental considerations are fully integrated into all stages of the development and decision-making process. The IEM philosophy (and principles) is interpreted as applying to the planning, assessment, implementation and management of any proposal (project, plan, programme or policy) or activity - at the local, national and international level - that has a potentially significant effect on the environment. Implementation of this philosophy relies on the selection and application of appropriate tools to a particular proposal or activity. These may include environmental assessment tools (such as Strategic Environmental Assessment and Risk Assessment); environmental management tools (such as monitoring, auditing and reporting) and decision-making tools (such as multi-criteria decision-support systems or advisory councils).

Integrated Environmental Management (IEM)

The part of the overall management system that includes organisational structure, planning activities, responsibilities, practices, procedures, processes, and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy. (SABS ISO 14001: 1996)

Interested and affected parties (I&APs)

Individuals, communities or groups, other than the proponent or the authorities, whose interests may be positively or negatively affected by a proposal or activity and/or who are concerned with a proposal or activity and its consequences. These may include local communities, investors, business associations, trade unions, customers, consumers and environmental interest groups. The principle that environmental consultants and stakeholder engagement practitioners should be independent and unbiased excludes these groups from being considered stakeholders.

Lead authority

The environmental authority at the national, provincial or local level entrusted in terms of legislation, with the responsibility for granting approval to a proposal or allocating resources and for directing or coordinating the assessment of a proposal that affects a number of authorities.

Mitigate

The implementation of practical measures to reduce adverse impacts.

Non-governmental organizations (NGOs)

Voluntary environmental, social, labour or community organisations, charities or pressure groups.

Proponent

Any individual, government department, authority, industry or association proposing an activity (e.g. project, programme or policy).

Proposal

The development of a project, plan, programme or policy. Proposals can refer to new initiatives or extensions and revisions to existing ones.

Public

Ordinary citizens who have diverse cultural, educational, political and socio-economic characteristics. The public is not a homogeneous and unified group of people with a set of agreed common interests and aims. There is no single public. There are a number of publics, some of whom may emerge at any time during the process depending on their particular concerns and the issues involved.

Role-players

The stakeholders who play a role in the environmental decision-making process. This role is determined by the level of engagement and the objectives set at the outset of the process.

Scoping

The process of determining the spatial and temporal boundaries (i.e. extent) and key issues to be addressed in an environmental assessment. The main purpose of scoping is to focus the environmental assessment on a manageable number of important questions. Scoping should also ensure that only significant issues and reasonable alternatives are examined.

Screening

A decision-making process to determine whether or not a development proposal requires environmental assessment, and if so, what level of assessment is appropriate. Screening is initiated during the early stages of the development of a proposal.

Significant/significance

Significance can be differentiated into impact magnitude and impact significance. Impact magnitude is the measurable change (i.e. intensity, duration and likelihood). Impact significance is the value placed on the change by different affected parties (i.e. level of significance and acceptability). It is an anthropocentric concept, which makes use of value judgements and science-based criteria (i.e. biophysical, social and economic). Such judgement reflects the political reality of impact assessment in which significance is translated into public acceptability of impacts.

Stakeholders

A sub-group of the public whose interests may be positively or negatively affected by a proposal or activity and/or who are concerned with a proposal or activity and its consequences. The term therefore includes the proponent, authorities (both the lead authority and other authorities) and all interested and affected parties (I&APs). The principle that environmental consultants and stakeholder engagement practitioners should be independent and unbiased excludes these groups from being considered stakeholders.

Stakeholder engagement

The process of engagement between stakeholders (the proponent, authorities and I&APs) during the planning, assessment, implementation and/or management of proposals or activities. The level of stakeholder engagement varies depending on the nature of the proposal or activity as well as the level of commitment by stakeholders to the process. Stakeholder engagement can therefore be described by a spectrum or continuum of increasing levels of engagement in the decisionmaking process. The term is considered to be more appropriate than the term "public participation".

Stakeholder engagement practitioner

Individuals or firms whose role it is to act as independent, objective facilitators, mediators, conciliators or arbitrators in the stakeholder engagement process. The principle of independence and objectivity excludes stakeholder engagement practitioners from being considered stakeholders.

ABBREVIATIONS

CBO	Community-based Organization
COP	Conference of the Parties (in reference to a particular convention)
CSD	United Nations Commission on Sustainable Development
DEAT	Department of Environmental Affairs and Tourism
EA	Environmental Assessment
EU	European Union
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMAS	Eco-Management and Audit Scheme
EMS	Environmental Management Systems
FAO	Food and Agriculture Organisation
I&AP	Interested and Affected Party
IAEA	International Atomic Energy Agency
ICJ	International Court of Justice
ICLEI	International Council for Local Environmental Initiatives
IEM	Integrated Environmental Management
ILC	International Law Commission
IMO	International Maritime Organisation
ISO	International Standards Organisation
IUCN	International Union for the Conservation of Nature and Natural Resources
NEMA	National Environmental Management Act
NGO	Non-governmental Organization
RoD	Record of Decision
SABS	South African Bureau of Standards
SADC	Southern African Development Community
SEA	Strategic Environmental Assessment
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational Scientific and Cultural Organisation
WBCSD	World Business Council for Sustainable Development
WCED	World Commission on Environment & Development



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