The Environmental Impact Assessment and Management Strategy for South Africa - 2014

Suggested citation:

Department of Environmental Affairs, 2014, Environmental Impact Assessment and Management Strategy for South Africa (Draft).

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Errors or omissions found subsequent to printing will be corrected in the online version at www.environment.gov.za

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The Project Steering Committee is established by the Department of Environmental Affairs (DEA) for identified sectors to collaborate on a strategy for impact assessment and management in South Africa.

Acknowledgements

Acknowledgement to the EIAMS Project Steering Committee members who devoted their time, skills and energy on a continuous basis over the past 4 years. The contributions of many other individuals from the various sectors, whose comments were reported to the PSC by their sector representatives, are gratefully acknowledged.

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The report is the product of the collaboration involving the members Project Steering Committee, the sectors they represent and input from the Advisory and Reference Groups. Numerous individuals, colleagues and professionals provided information and expert opinion, and are acknowledged for their contribution. In particular –

Jenny Hall	- Enviro Council , SA	Gerard van Weele	- South Africa
Johan Nel	- North West University, SA	Susie Brownlie	- Cape Town
Jenny Pope	- Australia	Mary-Jane Morris	- Cape Town
Peter Croal	- Canada	Ingrid Coetzee	- Cape Town
Angus Morrison-Saunders	- Australia	Charl de Villiers	- Botanical Society of SA

Special mention is made of the small task team for considering comments, relevant amendments to report and final editing of draft strategy. These volunteers generously gave their time over and above their active contribution on the Steering Committee.

Paul Hardcastle
Richard Hill – final editor
Mercia Komen
Sean O' Beirne
Francois Retief
Richard Summers

The team included Madeleine Oosthuizen, Project Coordinator and author of the first draft "*Environmental Impact Assessment and Management Strategy*".

Appreciation goes to the authors of the eleven Sub-Theme Reports –

EnAct International: Ingrid Coetzee, Glendyr Nel
DEA: Madeleine Oosthuizen
MLA-Sustainability Matters: Marlene Laros
NGO Sector: Mercia Komen
Phelamanga Projects: Rod Bulman
SE Solutions (Pty) Ltd: Sean O'Beirne
SSI Environmental: Mark Freeman, Janet Loubser, Gillian Maree, Malcolm Roods, Gerard van Weele
The Green Connection: Christy Bragg, Basier Dramat, Liz Mcdaid, Lynette Munro, Roshan Stanford

And Theme Reports –

Council for Scientific and Industrial Research (CSIR):
Benita de Wet, Michelle Audouin, Douglas Trotter, Marius Claassen, Karen Nortje
uKhozi Environmentalists:
Ken Smith, Marita Oosthuizen, Jaco Grundling, Elbie Oosthuizen

Definition of Terms

Adaptive management	Adaptive management strives to eliminate, reduce or rectify unforeseen or adverse impacts through corrective action. It responds to evidence of impacts and continually monitors and assesses the efficacy of changes in management action, which achieves best practice and continual improvement.
Alignment	The proper positioning of parts in relation to each other
Accessible	Able to be easily obtained or used; easily understood or appreciated. Also means removing the barriers that prevents access to websites and electronic documentation by people with disabilities.
Biodiversity offsets	Conservation activities that are designed to give biodiversity benefits to compensate for losses. These 'averted loss offsets' aim to reduce or stop biodiversity loss (e.g. future habitat degradation) in areas where this is predicted. The offset should result in the protection of equal or more environmental assets, measured in size, type and function. This form of ecological compensation is sustained over time.
Building Platform	Building Platforms are the main objectives of the Environmental Impact Assessment and Management Strategy, and are expressed as desired outcomes.
Capacity Building	Building abilities, relationships and values that will enable organisations, institutions and individuals to improve their performance and achieve sustainability. It includes influencing collective and individual beliefs, values and practices to alter behaviour and performance.
Civil Society	Civil society is the sphere of organizations and/or associations of organizations located between the family, the state, the government of the day, and the prevailing economic system, in which people with common interests associate voluntarily. Amongst those organizations, they may have common, competing or conflicting values and interests. Source: National Development Agency (www.nda.org.za)
Constitution	The Constitution of South Africa
Coordination	The organization of different elements of a complex body or activity to enable them to work together effectively.
Corporate governance	Refers broadly to the rules, processes, or laws by which businesses are operated, regulated, and controlled.
Credible spatial planning frameworks	SDFs that are informed by an SEA or EMF that was compiled during the SDF planning process
Corporate Social Investment (CSI)	Corporate Social Investment encompasses projects that are external to the normal business activities of a company and not directly for purposes of increasing company profit. These projects have a strong developmental approach and utilise company resources (time, money and/or expertise) to benefit and uplift communities and are not primarily driven as marketing initiatives.

Desired State of the Environment Reports	The main purpose of this category of reporting is to determine a desired state for the environment and to contrast this with the current (status quo) state of the environment. These may include reporting by using environmental management tools and instruments such as environmental outlook reporting, sustainability-led SEAs, EMF's or other spatial tools.
Discretion	Refers to a careful, cautious, good judgement in decision-making which is guided by clear parameters and defined criteria.
Ecologically sustainable development	Sustainable development implies the selection and implementation of a development option which allows for appropriate and justifiable social and economic goals to be achieved without compromising the natural system on which it is based. Sustainable development therefore ensures that non-negotiable environmental thresholds are maintained, ecosystems are sustained, effective climate change mitigation and adaption is facilitated, and natural resources are used effectively. A movement to a green and low-carbon economy is required.
Fit for purpose	The Environmental Management instrument or tool is appropriate to the nature, scale and scope of a proposal or activity and the level of assessment required to enable defensible, informed and impartial environmental decision making; the instrument or tool is appropriate to the significance of anticipated impacts, providing for a scoped yet comprehensive analysis to enable the identification, prediction, assessment and evaluation of the potential and actual environmental impacts and the risks of proposals and activities; and will enable the consideration of alternatives and options for mitigation, with a view to minimising negative impacts, maximising benefits and promoting compliance with the national environmental management principles in section 2 of NEMA.
Information and management systems	Information Systems record and store information. Information management systems are a sub-set of information systems, and provide information in a format which collates, compares, categorises or otherwise makes information more valuable.
Environmental Management	The management process to achieve the philosophy of Integrated Environmental Management.
Environmental Outlook Report	The Environmental Outlook Report goes beyond traditional State of the Environment Reports in that it build on the analysis of past and current trends to outline policy options for the future, leading to different outcomes over the next 20–30 years. This report should include quantitative indicators or indices of sustainable development and environmental sustainability.
Environmental Practitioners	Delineated to include those in the private and NGO sectors, academics, and officials in all spheres of government and includes all the proposed classifications of the environmental profession namely EAP, Public Participation Practitioner, ECO, SIA practitioner, practitioners specialising in using Environmental Spatial Planning and Strategic Planning tools.
Guidelines	Guidelines serve to streamline processes according to sound practice, advising on matters related to processes, regulations and legislation of IEM and the selection of appropriate selection and use of instruments and tools. In this Strategy 'guidelines' include manuals, regulatory guides, guidelines and information series documents.

Impact mitigation hierarchy	The Impact Mitigation Hierarchy is a tool which is used reiteratively throughout a project lifecycle to limit negative impacts on the environment. The first tier considers how to avoid the impact entirely and is considered early in the project to allow for alternatives to be considered. The impacts which cannot be avoided should be minimised. Effective minimisation can eliminate some impacts and reduce others allowing for sustainability targets to be met. Where the targets cannot be met, the application should be declined. The next consideration is restoration and takes place where minimisation efforts have failed to reach the required target. Finally, and as a last resort to compensate for ecological loss or residual impacts, the environmental loss or damage can be offset through compensation. The intention of this level is to ensure the protection of equivalent or greater ecological assets than those lost, or to rehabilitate a degraded environment restoring equivalent ecological assets.
Indicators	Something observed or calculated that is used to show the presence or state of a condition or trend.
Instrument	A means by which something is effected or done; sometimes an established process by which something takes place or is brought about. Examples in the context of IEM include: EMFs, EIPs, conservation and bioregional plans, and environmental management plans.
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 throughout typical management activities of plan, do, act and check 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. The practice of IEM persists throughout the lifecycle of the project, plan or policy. See also Environmental Management (EM)
Integration	Combine two or more things to form a whole.
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, landowners, residents, 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 I&APs.
Level	Descriptive of the relative point on a scale, generally implying some ranking. Here also used to indicate organisational scale such as spheres of government.
Life cycle assessment	A process where the potential environmental effects or impacts of a product or service throughout the life of that product or service is evaluated.
Limits of acceptable change	Non-negotiable ecological thresholds required to maintain natural capital over time.
Non-governmental organisations (NGOs)	Voluntary environmental, social, labour or community organisations, charities or pressure groups.

Objectives	Something that one's efforts or actions are intended to attain or accomplish; refers to purpose, goals and targets. In the strategy “objectives” are used referring to wider objectives while “targets” are used when more detailed information is available to set more specific detailed targets based on identified indicators. The strategy proposes a progression from objectives to indicators, and indicators to detailed targets as more detailed information becomes available.
Peer review	The evaluation of work by one or more people of similar or better competence to the producers of the work. Peer review is regarded as a form of self-regulation to maintain quality standards, improve performance and provide credibility.
Pillar	In the Environmental Impact Assessment and Management Strategy the pillars summarise the shared direction or intent which support attaining the objectives, called Building Platforms. Actions and Goals are to be defined within each Pillar, and the implementation will lead to the attainment of each objective, and therefore of the Vision.
Progression of tools	The progression of environmental instruments, tools and plans describes the different types of instruments and tools and plans, from broad to specific that are used in the IEM process. A robust flow of information between the instruments and tools should take place. Strategic planning should influence project specific assessment and decisions and project specific information should inform strategic planning. Each instrument or tool provides specific information which, in combination with that provided by the others, broadens understanding of environmental opportunities and constraints for sustainable development, and improves decisions and implementation.
Proponent	Any individual, government department, authority, industry or association proposing an activity (e.g. project, programme or policy).
Role-players	One who assumes or acts out a particular role. Used to inclusively comprise all persons, groups and organisations who are involved in directing, leading or actively contributing to the processes of environmental planning and management, in order to influence the processes and their outcomes.
Scale	A measure of something relative to another thing.
Scope	Indicates boundaries, reach, limits in time, space, capacity or opportunity.
Sectoral	Sectors are all units of central, provincial and local government, which includes municipalities and district municipalities. Also a collection of shared interests and characteristics unique to the sector but shared within. Examples are mining, energy, health.
Stakeholder	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 (Source: DEA Information Series). See also: Interested and Affected Parties

Strategic Environmental Forums	Function of these forums is to coordinate the formulation of strategic environmental plans, including the monitoring of the implementation of EIPs and EMPs against sustainability targets, EMFs, SEAs, the application of spatial instruments and other cross-sectoral planning initiatives, the alignment and integration of regulatory procedures (i.e. application processes and information requirements) and where appropriate, the alignment and/or integration of decision making in regulatory processes. of policies, plans and programmes (especially SEAs, EMFs and SDFs), based on the achievement of determined sustainability objectives and targets, as well as the requirements contained in provincial EIPs. Facilitate the coordination and alignment of policies, plans and programmes (especially SEAs, EMFs and SDFs), based on the achievement of determined sustainability objectives and targets, as well as the requirements contained in provincial EIPs.
Sustainability	Sustainability in this context implies ecological sustainability. In the first instance, it recognises that the maintenance of healthy ecosystems and natural resources are preconditions for human wellbeing. In the second instance, it recognises that there are limits to the goods and services that can be provided. In other words, ecological sustainability acknowledges that human beings are part of nature and not a separate entity. See also ecologically sustainable development.
Sustainability indicators	The key mechanism for measuring performance in terms of achieving sustainability.
Sustainable development	The maintenance of healthy ecosystems and natural resources are preconditions for human wellbeing and there are limits to the goods and services that can be provided. Ecological sustainability recognises that human beings are part of nature and not a separate entity. There are non-negotiable ecological thresholds that need to be maintained. The social and economic sub-systems are embedded within the ecosystem.
Tokenism	The practice of making only a symbolic effort.
Tool	A tool is a thing for working on something; a device or implement used to carry out a particular function, a means to an end. Examples in IEM include: Life Cycle Assessment, Cost benefit analysis, Environmental Auditing,
Trade-offs	The transformation of one form of capital to another. The exchange of one thing for another of more or less equal value, especially to effect a compromise. Often a trade-off is the transformation of one form of capital to another; a balancing of factors all of which are not attainable at the same time.

Acronyms and Abbreviations

ACMP	Association of Cementitious Material Producers
AMD	Acid Mine Drainage
BA	Basic Assessment
BUSA	Business Unity South Africa
CHE	Council on Higher Education
CO_2	Carbon dioxide
CPD	Continuing Professional Development
CSIR	Council for Scientific and Industrial Research
DBSA	Development Bank of Southern Africa
DEA	Department of Environmental Affairs
DEA GIS	Department of Environmental Affairs' Geographic Information Systems
DMR	Department of Mineral Resources
DWA	Department of Water Affairs
EA	Environmental Assessment
ECO	Environmental Control Officer (also Waste Management- , Emission- and Fishery Control Officer)
EIAMS	Environmental Impact Assessment and Management Strategy
EIP	Environmental Implementation Plan
EM	Environmental Management
EMF	Environmental Management Framework
EMP	Environmental Management Plan
EMPr	Environmental Management Programme
EMS	Environmental Management System
FSE	Federation for a Sustainable Environment
GIS	Geographic Information System
HEQC	Higher Education Quality Committee

IAIASA	South African affiliate of the International Association for Impact Assessment
LCA	Life Cycle Assessment
LRC	Legal Resources Centre
MSA	Municipal Systems Act
MTSF	Medium Term Strategic Framework
NDP	National Development Plan
NEAS	National Environmental Authorisation System (administrative tracking system)
NEM:AQA	National Environmental Management: Air Quality Act (39 of 2004)
NEM:BA	National Environmental Management: Biodiversity Act (10 of 2004)
NEM:ICM	National Environmental Management: Integrated Coastal Management Act (24 of 2008)
NEM:PAA	National Environmental Management: Protected Areas Act (57 of 2003)
NEM:WA	National Environmental Management: Waste Act (59 of 2008)
NEMA	National Environmental Management Act 1998 (Act No. 107 of 1998)
NGO	Non-governmental Organisation
NSBA	National Spatial Biodiversity Assessment
NSSD	National Strategy for Sustainable Development
PSC	Project Steering Committee
REE	Review of Effectiveness and Efficiency of EIA in South Africa
SA	South Africa
SAAQIS	South African Air Quality Information System
SACLAP	South African Council for the Landscape Architectural Profession
SALGA	South African Local Government Association
SANBI	South African National Biodiversity Institute
SanParks	South African National Parks
SAPI	South African Planning Institute
SAPOA	South African Property Owners Association
SAQA	South African Qualifications Authority
SDF	Spatial Development Framework

SDI	South African Spatial Data Infrastructure
SDI Act	Spatial Data Infrastructure Act (Act 58 of 2003)
SEA	Strategic Environmental Assessment
SEMA	Specific Environmental Management Acts
SETA	Sector Education and Training Authority (SETA)
SoER	State of Environment Reporting
SPLUMA	Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013)
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
WESSA	Wildlife and Environmental Society of South Africa
WSSD	World Summit on Sustainable Development

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Fundamental Principles

INTRODUCTION

The principles outlined below are to be adopted and adhered to in the implementation of the Environmental Impact Assessment and Management Strategy (EIAMS), in order to achieve an environment that enhances human health and well-being, and to ensure that the environment is protected for the benefit of present and future generations.

The intention is to provide a set of fundamental principles to guide all role-players involved in the implementation of the Strategy.

PRINCIPLE OF INTEGRATION

1. The EIAMS entails the implementation, adaptation and/or reformulation of the Integrated Environmental Management (IEM) system currently being implemented in terms of Chapter 5 of the National Environmental Management Act (NEMA), in order to integrate effectively environmental considerations into all aspects of governance.

2. The integration of environmental management principles into policies, plans, programmes, projects and processes is central to the implementation of the EIAMS.

3. A primary purpose of the EIAMS is to enable and enhance the utilisation of a range of Environmental Management (EM) instruments and tools to achieve, among others, the following:

    3.1. To integrate environmental considerations into the formulation and implementation of policies, plans, programmes and projects.

    3.2. To inform environmental decision making at both strategic and project specific levels.

    3.3. To ensure the development and use of appropriate EM instruments and tools (appropriate means relevant to the context), whether at a broad spatial scale, in a strategic application, or in a specific locale.

    3.4. To ensure decision making that is based on and supported by the knowledge, information and values generated by or through the application of EM instruments and tools.

    3.5. To attain the environmental right contained in the Constitution (RSA, 1996: section 24(b)) which requires that the environment is protected *"through reasonable legislative and other measures that - … secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development*".

3.6. To promote co-ordination, alignment and/or integration[1] (see Platform 2 for elaboration of these terms) of regulatory processes and decision making to:

3.6.1. Improve and enhance the efficiency of decision making, and

3.6.2. Improve and enhance the efficacy of decision making in maintaining and enhancing the integrity of the environmental management mandate.

3.7. To ensure the use of EM instruments and tools that are 'fit for purpose' as outlined further in section 4.

3.8. To promote compliance and enable effective self-regulation through an adequately resourced compliance monitoring and enforcement programme.

4. For the purpose of determining the most appropriate EM instrument or tool (or combination thereof), 'fit for purpose' means that:

4.1. The EM instrument or tool is appropriate to the nature, scale and scope of a proposal or activity and the level of assessment and evaluation required to enable defensible environmental decision making (i.e. relevant and rational considerations).

4.2. The EM instrument or tool is appropriate to the significance of anticipated impacts of proposals or activities and the level of information required for defensible environmental decision making by providing for a scoped yet comprehensive analysis of potentially significant environmental effects.

4.3. The EM instrument or tool that will most effectively enable: the identification, prediction, assessment and evaluation of the potential and actual environmental impacts and the risks of proposals and activities; and will enable the consideration of alternatives and options for mitigation, with a view to minimising negative impacts, maximising benefits and promoting compliance with the national environmental management principles in section 2 of NEMA.

4.4. The EM instrument or tool is undertaken at the appropriate level (i.e. strategic or project level).

4.5. The EM instrument or tool enables informed and impartial decision making by the relevant authorities.

[1] Integration comes from the Latin word for 'made whole', and means to combine two things so they form a whole. Alignment means the proper positioning of parts in relation to each other. Coordination has a similar meaning to alignment, as the organization of different elements of a complex body or activity to enable them to work together effectively. There is thus a progression from alignment through to full integration. In the context of IEM, both alignment and integration improve cooperative environmental governance.

PRINCIPLE OF SUSTAINABILITY

5. The principle of sustainability is central to the vision of the EIAMS and the objectives of IEM in South Africa.

6. The principle of sustainability must inform the system of environmental governance – meaning that the design of law and governance must be informed by the fundamental principle of ecological sustainability in the pursuit of justifiable socio-economic development (as required by the Constitution).

7. Recognising that sustainable development is difficult to define, the overarching importance of achieving sustainability shall be institutionalised through:

    7.1. The implementation of the impact mitigation hierarchy which strives to avoid impacts and if unavoidable, minimise and remedy such impacts, whilst maximising positive effects, with the purpose of maintaining the interdependent sustainability requirements for biophysical system integrity and basic human well-being, avoiding inappropriate trade-offs that result in the loss of essential ecosystem functioning.

    7.2. The principle of pollution prevention and minimisation of impacts.

    7.3. The application of the Best Practicable Environmental Option.

    7.4. The creation of an institutional framework that ensures the realisation of intra- and inter-generational equity and sustainability through the implementation of a life cycle and full cost accounting approach to environmental governance and decision making.

    7.5. The appropriate development and use of sustainability indicators to inform defensible environmental decision making. The core components of sustainability indicators include:

        7.5.1. **Operationalising sustainability**: Sustainability must be operationalised through the development and application of sustainability indicators in accordance with the National Development Plan's Medium Term Strategic Framework (MTSF), the National Strategy for Sustainable Development and Action Plan 2011-2014, Presidential Outcome 10 and the national environmental management principles in section 2 of NEMA, and any future refinements and additions to policies for advancing sustainability.

        7.5.2. **Context specific**: Sustainability indicators must correspond with the appropriate spatial (i.e. space) and temporal (i.e. time) scales. National sustainability indicators should not exclude or preclude the formulation of more stringent indicators and sustainability targets at the regional and local scale or project level. Local sustainability indicators may be context specific, and based on more refined/detailed information and active public participation as part of the formulation of such indicators. Local indicators should feed back, inform and refine strategic national sustainability indicators.

7.5.3. **Integration into policies, plans, programmes and projects**: Sustainability indicators must be integrated into the national, provincial, regional and local contexts through the incorporation thereof into:

7.5.3.1. Planning frameworks such as Environment Outlook Reporting, Environmental Management Frameworks (EMFs), Strategic Environmental Assessments (SEAs), Spatial Development Frameworks (SDFs), Provincial SDFs, Integrated Development Plans (IDPs), and municipal SDFs.

7.5.3.2. National government's 5-year Medium Term Strategic Framework (of the National Development Plan).

7.5.3.3. 5-year strategic plans developed by national and provincial departments.

7.5.3.4. Environmental Implementation Plans (EIPs) and Environmental Management Plans (EMPs) in terms of Chapter 3 of NEMA.

7.5.4. **Performance Measurement:** Sustainability indicators are a key mechanism for measuring performance and progress in respect of ecological sustainability in relation to socio-economic goals.

8. **Consultation:** Sustainability indicators must be developed through a consultative process. This means that stakeholder groups are not merely informed about the implementation of sustainability indicators but are actively involved in the development and formulation of sustainability indicators.

9. **Information, monitoring and reporting:** Sustainability indicators are a key mechanism for generating and collating the type of information required to achieve the national environmental management principles in section 2 of NEMA, which enable stakeholders to prioritise issues which jeopardise sustainability, identify more sustainable alternatives, and allow for corrective action through adaptive environmental management Human health and wellbeing should be considered in the determining of the criteria and indicators for a sustainability approach

> *The correct context to sustainability indicators is provided by establishing appropriate spatial scales, time scales and environmental quality targets. Sustainability indicators enable all role-players and stakeholders, in both the public and private sectors, to have a clear understanding of the objectives and targets to be sought and achieved towards the attainment of sustainability.*

10. **Precautionary principle:**[2] Ensuring the effective utilisation of sustainability indicators enhances the integration of the precautionary principle into sustainability/environmental assessment by establishing early warnings based on expert opinions on uncertainty and identifying the need for immediate remedial action.

PRINCIPLE OF REASONABLENESS AND ADMINISTRATIVE DISCRETION

11. The implication of the shift to include other EM instruments and tools alongside Environmental Impact Assessment (EIA) is that a consideration of the most appropriate EM instrument or tool for assessing the impacts of activities entails the exercise of administrative flexibility and discretion.

12. In addition, it is anticipated that discretion will be exercised in the following instances:

    12.1. Screening to determine:

        12.1.1. The most appropriate EM instrument or tool and the level at which the assessment of significant environmental effects must be undertaken.

        12.1.2. The nature and scope of public participation required, in relation to the level of assessment and evaluation, to inform the decision making process.

    12.2. Deciding when authorisation can be granted or an activity de-listed based on an adopted high level strategic EM instrument plus the undertaking of other subsidiary EM tools (such as Environmental Management Programmes) as opposed to conducting a project level EIA.

13. **Minimum Criteria**: The exercise of discretion must be guided by minimum criteria to avoid environmental decision making that:

    13.1. Compromises the preventative principle.

    13.2. Compromises the precautionary principle.

    13.3. Compromises the environmental right contained in the South African Constitution.

    13.4. Compromises the right to administrative justice.

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[2] **Precautionary principle:** Precaution entails: (a) leaving ecological space as room for ignorance, which applies to both resource extraction and levels of development; (b) shifting the burden of proof from those affected to the proponent of development to show that their actions will not cause harm and, if some harm seems possible or likely, requiring funds to be set aside for possible cleanup of the environment or compensation to affected individuals; (c) care in management – the uncertainty of EA predictions means that the attainment of sustainability includes a process of trial and correction of errors, which requires baseline and impact monitoring with feedback loops to management should remedial action be necessary; and (d) thoughtful action in advance of scientific proof of cause and effect – in this sense precaution requires action over inaction in dealing with a possible threat, identified by a process of reasoning, in advance of convincing empirical evidence of either the cause or the presence of the threat (O'Riordan, T. (2000), 'Environmental Science on the Move', in T. O'Riordan (ed.), *Environmental Science for Environmental Management,* Harlow: Prentice Hall, pp. 1-27).

13.5. Compromises the principles of intra-generational and inter-generational equity.

13.6. Compromises the principle of pollution prevention and minimisation of impacts.

13.7. Is not based upon an adequate identification and assessment of the risks to human health, well-being and/or the environmental impact reasonably anticipated in connection with an activity.

14. **Guidelines:** The exercise of discretion in each instance must be informed by Guidelines for decision making to give effect to the minimum criteria. The purpose behind the Guidelines is to ensure that the exercise of discretion is not 'unfettered' in the sense that it gives rise to poor environmental governance.

15. **Consultation:** The Guidelines on administrative discretion must be developed through a consultative process. This means that stakeholder groups are not merely informed about the Guidelines but are actively involved in the development and formulation of the Guidelines.

PRINCIPLE OF PUBLIC PARTICIPATION

16. Recognising that the national law (e.g. NEMA) and international environmental law (e.g. the Rio Declaration) emphasise the need for public participation in decisions by organs of state that significantly affect the environment, a range of participatory methods and techniques and opportunities for public participation in environmental decision making must be provided for in the EIAMS.

17. The need for effective public participation stems from South Africa's constitutional democracy where the involvement of affected stakeholders (including citizens and Non-Governmental Organisations) can actively contribute to promoting public environmental interests. EM instruments and tools therefore provide a vehicle for effective public participation in environmental decision making.

18. Public participation in environmental decision making must further identify key stakeholders and must promote meaningful and proactive engagement between decision makers and affected stakeholders. Meaningful engagement in this context has the potential to contribute towards sustainable development.

19. The scope at which effective public participation is conducted, in terms of detail and extent (reach), must be determined by the context and locality of a proposal or activity, the magnitude and significance of the impact or threat posed to ecological and social systems, and the resilience or sensitivity/vulnerability of such systems, including consideration of the impact on the well-being and health of people, the cultural or historic value of the setting, and the particular socio-economic conditions.

Environmental Impact Assessment and Management Strategy (EIAMS)

Executive Summary

The current environmental management (EM) system provided for in Chapter 5 of the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998), and subsequent amendments, promotes Environmental Impact Assessment (EIA) as the main compulsory tool to ensure Integrated Environmental Management (IEM) in South Africa, through a regulated environmental authorisation process. In addition to this focus on EIA, Environmental Management Frameworks (EMFs) have been used since 2008 as a strategic environmental instrument to provide a strategic context for project level decision making and the processes involved in the issuing of environmental authorisations. The Environmental Impact Assessment and Management Strategy (EIAMS) aims to provide a more effective and efficient IEM system that is supported by a range of EM instruments and tools.

The strategy process considered the desired future state for the IEM system and sought to define the way to achieve it within the mandate provided by Chapter 5 of NEMA – as far as possible – and largely within the context of existing environmental policies.

The desired future was given direction by the workshops that were held at the '10 years of EIA' conference in 2008, and includes an IEM system consisting of voluntary and regulated instruments and tools in the next 5 years, where:

> *the inefficiencies and ineffectiveness of the current IEM system have been corrected and the efficiencies and effectiveness optimized;*
> *regulated EIA is used only when it is the most appropriate tool;*
> *IEM is given effect through a variety of EM instruments and tools that would, depending on the nature of activities and the receiving environment, supplement (add to), complement (complete) or replace EIA;*
> *EM takes place within a strategic context of environmentally informed spatial instruments, sector policies and strategies;*
> *authorities are sufficiently capacitated with skilled and experienced officials;*
> *other stakeholders are capacitated and empowered to maximise their influence on the effectiveness and efficiency of the system;*
> *government regulatory processes have been integrated, as far as possible, or at least aligned; and*

all stakeholders are equally committed to make the IEM system work, including government, the private sector, civil society, and the range of professionals from the disciplines and domains of development and the environment.

Based on the desired future, a vision for the EIAMS was agreed on by the Project Steering Committee (PSC) at the commencement of the project namely:

"To give effect to the framework for integrated environmental management by providing for a diverse range of regulatory and other mechanisms to ensure proactive assessment and management that are implemented through cooperative governance and accountable, transparent and participatory decision making, ***to achieve sustainable development****".*

Various role-players (those who assume or act out a particular role) perceive the EIA process as not addressing critical sustainable development issues. Section 24 of the Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996: section 24(b)(iii)) requires, amongst other things, that "*the environment is protected through reasonable legislative and other means to secure ecologically sustainable development and the use of natural resources*". Chapter 1 section 2 of NEMA and Chapter 5 of NEMA seek to give effect to this imperative by providing national environmental principles and by promoting the application of appropriate environmental management instruments and tools to ensure the integrated management of activities that may impact on the environment (Chapter 5). The mandate of the Strategy (EIAMS) is therefore within Chapter 5 of NEMA.

The EIAMS has been informed by, and provides a summary of, clear national directives that should inform the sustainability pathway for the country, drawn from inter alia the National Development Plan (NDP), the Medium Term Strategic Framework (MTSF), Presidential Outcome 10 and the National Strategy for Sustainable Development (NSSD).

The NDP identified relevant sub-outcomes and actions for the MTSF, namely, to sustain ecosystems and use natural resources efficiently; to develop effective responses to climate change mitigation and adaptation; to grow an environmentally sustainable, low-carbon economy; to enhance governance systems and capacity; and build and manage sustainable human communities. The MTSF's (2009-2014) Strategic Priority 9 – stated as "*Sustainable Resource Management and use*" – identified key programmes including the need for "*a common* ***system for environmental impact management*** *across government in developing the Environmental Impact Management Strategy that will ensure improved efficiency and effectiveness*" (The Presidency, 2009: p. 26). The EIAMS is therefore a direct response to the MTSF Strategic Priority 9. Presidential Outcome 10 (2010: p. 2-3) – stated as "*Environmental Assets and Natural Resources that are well protected and continually enhanced*" – identified four main outputs and measures, namely:

"*Output 1: Enhanced quality and quantity of water resources …*

Output 2: Reduced greenhouse gas emissions, climate change impacts and improved air/atmospheric quality …

Output 3: Sustainable environmental management …

Output 4: Protected biodiversity".

The NSSD (2011: p. 14), as approved by Cabinet on 23 November 2011, contains five strategic priorities and an associated Action Plan within the context of sustainable development, namely:

"*Priority 1: Enhancing systems for integrated planning and implementation …*

Priority 2: Sustaining our ecosystems and using natural resources efficiently …

Priority 3: Towards a green economy…

Priority 4: Building sustainable communities

Priority 5: Responding effectively to climate change".

Figure 1 shows the relationship between the sustainability objectives of the NDP, the MTSF, Outcome 10 and the NSSD.

The five main objectives of the NDP, MTSF, Outcome 10 and the NSSD relevant for the strategy can be summarised as:

- enhanced governance systems and sustainable environmental management;
- sustained ecosystems and protected biodiversity;
- effective response to climate change;
- a low carbon or green economy; and
- sustainable communities.

Sustainability (or a sustainable society) is seen as the overall goal of the NSSD. Sustainability in this context implies ecological sustainability. In the first instance, the NSSD recognises that the maintenance of healthy ecosystems and natural resources are preconditions for human wellbeing. In the second instance, it recognises that there are limits to the goods and services that can be provided. In other words, the notion of ecological sustainability recognises that human beings are part of nature and not a separate entity. The Strategy accepts and promotes the definition of sustainability as reflected in the NSSD.

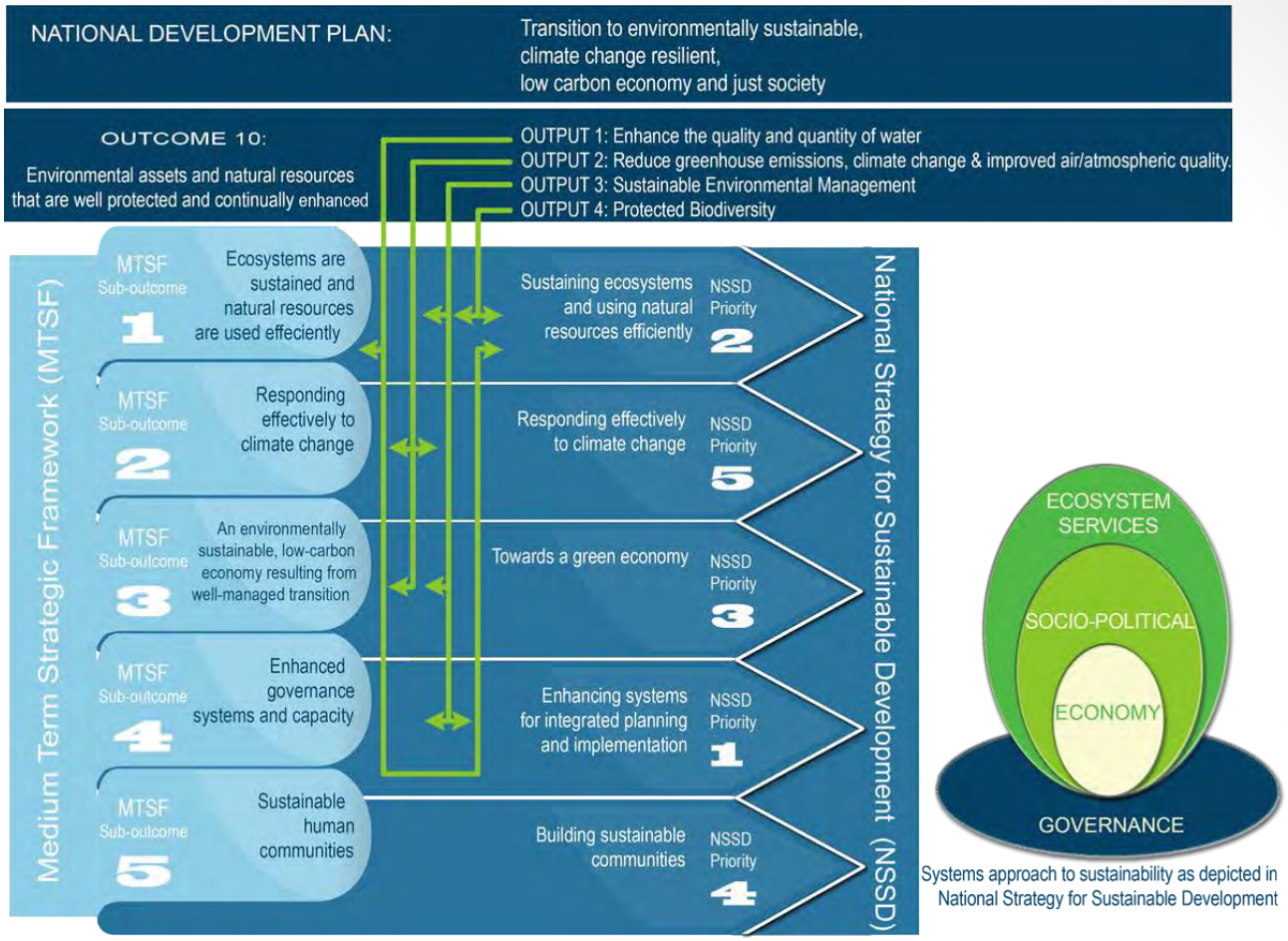


FIGURE 1 RELATIONSHIP BETWEEN NDP, MTSF, OUTCOME 10 AND NSSD

The EIAMS therefore focuses on how to change the current IEM system to support the move towards a sustainability path for the country. The strategy should therefore provide for an enhanced system for integrated planning and implementation (NSSD priority one), as well as enhanced governance systems and relevant capacity (MTSF sub-outcome 4) and sustainable environmental management (Outcome 10 output 3). The National Strategy for Sustainable Development (NSSD) further acknowledges that there are non-negotiable ecological thresholds that need to be maintained, and that the social and economic sub-systems are embedded within the ecosystem. The IEM system to be proposed in the strategy should ensure that these environmental thresholds are maintained, ecosystems are sustained and natural resources used effectively (NSSD priority 2). The system should further facilitate effective climate change mitigation and adaptation (MTSF sub-outcome 2 and NSSD priority 5), a movement towards a green and low-carbon economy (MTSF sub-outcome 3 and NSSD priority 3), and the realization of sustainable human communities (NSSD priority 4 and MTSF sub-output 5). In addition, there are various other strategies focusing specifically on climate change such as the climate change response plan.

Currently there is no accepted set of indicators to measure the success of actions towards sustainable development and sustainability. However based on existing initiatives South Africa's ranking in terms of indicators such as the ecological footprint and environmental sustainability index (DEA, 2013: part 1 p. 9) has slipped over the last few years, indicating increasing pressures on environmental systems and current weaknesses in the systems devised to deal with these pressures.

These limitations have dire consequences for the state of the environment and sustainability. The NDP confirms that South Africa needs to move away from the unsustainable use of natural resources.

Developing the Strategy

The process utilised for the development of the strategy included a bottom up process which commenced with the compilation of 11 Subtheme reports by independent EAPs, and thereafter the interrogation and integration of the common trends and recommendations – stemming from the Subtheme reports – in two Theme reports by independent EAPs. The two Theme reports were used to develop nine building platforms and a number of associated pillars. These platforms and pillars provide the foundation for the EIAMS in seeking to address the problems inherent in the current IEM system. The two Theme reports identified the following nine root causes underlying the limited success of the current IEM system in achieving sustainability (where a 'lack' means to not have enough of something):

1. Lack of internalisation of NEMA principles and the principles of sustainability.
2. Lack of effective cooperative governance.
3. Lack of mechanisms for monitoring, evaluation, feedback and adaptive management, and conflict resolution.
4. Lack of a systematic approach to the use of environmental management instruments and tools.
5. Lack of confidence in environmental professionals.
6. Lack of effective knowledge management and skills to utilise the knowledge management systems.
7. Lack of understanding of, and appreciation for, the environment and environmental management instruments and tools.
8. Lack of effective public participation and appreciation for public participation as a process that adds value to Integrated Environmental Management.
9. Lack of transformation of the environmental sector.

The following nine building platforms or main objectives, expressed as desired outcomes, were identified to address the root causes of these problems. These form the main building platforms of the EIAMS:

1. All Integrated Environmental Management (IEM) systems and processes are directed towards achieving sustainability.
2. There is effective alignment – and in some instances full integration - between and within all spheres of government and organs of state in giving effect to IEM.
3. Monitoring and evaluation of socio-economic, ecological and IEM systems and processes lead to adaptive management.
4. Environmental management instruments and tools are effective in achieving the objectives of IEM.
5. Environmental practitioners and specialists are professional, ethical, objective and independent.
6. Environmental information and information management systems are credible, up-to-date, accurate and accessible to all role-players in IEM systems and processes.
7. All role-players are environmentally aware and are capacitated to engage meaningfully in IEM systems and processes.
8. The purpose of public participation is understood and the process is used by all role-players in IEM systems and processes to inform environmental governance.
9. A transformed environmental sector exists.

The building platforms are supported by pillars leading to relevant appropriate actions. The next section provides a concise summary of each platform. Further detail is provided in the body of the document.

Achieving Sustainability

Building Platform 1: All Integrated Environmental Management (IEM) systems and processes are directed towards achieving sustainability.

The Environmental Right contained in the Constitution (RSA, 1996: section 24(b)) requires, amongst other things, that the environment is protected *"through reasonable legislative and other measures that - … secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development*". The National Development Plan (NDP) is clear that by 2030, South Africa's transition to an environmentally sustainable, climate-change resilient, low carbon economy and just society should be well underway. The National Framework for Sustainable Development (NFSD) promotes ecological sustainability as the key desired outcome of sustainable development, while the National Strategy for Sustainable Development (NSSD) confirms that the national development path should be directed towards sustainability.

When considering the trends of all sustainable development parameters, South Africa's success in converting the strategic policy context (e.g. NDP, NSSD) into effective development planning for the achievement of a sustainable future (or increasingly achieving sustainable outcomes) is questionable. To achieve the desired outcome of Platform 1, all legislation and policies, and the implementation thereof, which affect the environment must give effect to the principles of sustainability required by NEMA as well as ensuing sustainability objectives, indicators and targets.

Although NEMA sets out the sustainability principles, they are strategic in nature and as such, open to interpretation, discretion and different understandings. A clear and consistent understanding of the meaning of the NEMA principles should be enabled by the compilation of a guideline document focussing on the NEMA principles, and the revision of existing guidelines in the light of these principles. However, the NEMA principles are not context specific and cannot be measured easily. There is a need for clear sustainability objectives, supported by indicators and targets against which the success of the IEM system in achieving sustainability can be measured. Objectives have been set at the national sphere (e.g. the priorities of Presidential Outcome 10), but the national objectives must also be cascaded down into identifiable objectives, indicators and targets to provide guidance at the local sphere. In this regard, environmental planning plays an important role to bridge the gap between strategic national objectives and setting and implementing local objectives to achieve sustainable development outcomes on the ground. Environmental planning relates to the creation of a strategic environmental context for decision making and environmental performance, which ensures that communities can achieve sustainable development through the wise use of resources (inclusive of land) in a way that is good for ecosystems and society. Currently, Strategic Environmental Assessments (SEAs) and

Environmental Management Frameworks (EMFs) are the two key instruments used in strategic environmental planning.

Guidance will be required to facilitate the implementation of a sustainability-led approach at a strategic planning level, as well as at project planning level. Guidance is needed to assist in the formulation of objectives, indicators and targets at all levels of strategic planning to ensure that they are meaningful in guiding the achievement of sustainability or sustainable development outcomes. Guidance is also needed to evaluate the performance of both strategic and project level planning in giving effect to sustainability outcomes in the absence of identified objectives, indicators and targets, or until such time as these have been identified. However, such generic guidance does not take away the importance of developing sustainability objectives, indicators and supporting targets for different sectors and/or geographical areas (even in the municipal sphere). Until such time as such objectives and targets are in place, a generic guideline (and evaluation tool) would be a valuable tool to facilitate decision making towards achieving sustainability outcomes. The guideline would also ensure that practitioners and decision makers engage with sustainability issues in the compilation of project application documentation and during consent decision making.

There is further a need to evaluate all legislation and policies, and their implementation strategies, for potential conflict with a sustainability focus. In particular, sectoral legislation, policies and the implementation thereof by organs of state should be investigated to identify areas of conflict that may exist. To assist with the evaluation of legislation, policies and implementation strategies, the development of a robust evaluation tool is required.

It must be noted that the improved guidance on the NEMA principles and the identification of sustainability objectives, indicators and targets *per se* does not result in improved sustainability performance. Their success will be dependent on the understanding and adoption thereof by all role-players, including the general public, practitioners in the environmental sector, government officials, developers and contractors, who must be capacitated on the need for and implementation of the NEMA principles, sustainability objectives, indicators and targets.

The vision of the strategy is that a sustainability-led approach is adopted to maximise positive effects of human activity in meeting all of the interdependent sustainability requirements for biophysical system integrity and basic human well-being, avoiding inappropriate trade-offs. The adoption of a sustainability-led approach in Environmental Impact Assessment and Management will also promote the identification of sustainability objectives, indicators and targets in EMFs and SEAs, in the spheres of national, provincial and local government. This is especially relevant in provincial and local development planning frameworks and strategies. As such, the adoption of a sustainability-led approach in all spheres of government should aim to cascade sustainability

objectives, indicators and targets downwards, for refinement and meaningful implementation at a local scale.

Whilst the adoption and implementation of a sustainability-led approach is generally supported, it is acknowledged that the implementation thereof faces several challenges, especially given that the approach is relatively new in South Africa. To reach consensus between diverse stakeholders on setting objectives, indicators and targets, especially in the local sphere, will not be an easy task. Furthermore, the implementation of a sustainability-led approach is information intensive and in many instances, this level of information does not yet exist or is not readily available. A phased approach will have to be adopted to implement sustainability objectives, indicators and their associated targets. In a first phase, sustainability objectives will have to be defined at a project level on a case-by-case basis. A phased approach will also have to be adopted by initially only setting objectives and then progressing towards setting indicators and targets as more information becomes available. It must be emphasised that the implementation of a sustainability-led approach does not exclude the identification and mitigation – through avoidance, minimisation, reduction over time, and remediation – of the negative impacts of development on the environment.

An impact mitigation hierarchy approach should be implemented to avoid inappropriate trade-offs that could result in the loss of important ecosystem functions and significant societal impacts. The impact mitigation hierarchy dictates that impacts should firstly be avoided, but if unavoidable, appropriate measures should be taken to minimize, reduce and rectify such impacts, in a manner that will achieve sustainability objectives and targets. If impacts cannot be avoided, minimized, reduced (over time), or rectified, consideration can be given to the implementation of offsets, depending of the significance of such impacts. Offsets are therefore only to be used in exceptional circumstances to compensate for residual impacts caused by development projects, whether these are unavoidable societal impacts, harm to ecosystem functioning or the loss of biodiversity.

Trade-offs involve the transformation of one form of capital to another. In impact assessment and project planning this may involve the transformation of natural capital into social and man-made capital. However, the consideration of trade-offs is inappropriate unless an impact mitigation hierarchy approach has been followed in the assessment and management of impacts. In addition, the need for trade-offs must be evaluated against the achievement of sustainability objectives, indicators and targets. A proposed trade-off should be stated explicitly, and reasoned motivations should be provided in support of the application of trade-off rules to inform choices and decisions. Clear guidance, capacity building and awareness raising are needed in the application of, and rules for, trade-offs in decision making. In view of the existing and increasing ecological deficit the national sustainability understanding should support the notion of ‘no net loss’ or preferably overall ‘net gains’ from future development.

Effective Alignment

Building Platform 2: There is effective alignment – and in some instances full integration – between and within all spheres of government and organs of state in giving effect to IEM.

Integrated Environmental Management seeks to incorporate environmental considerations as early as possible into the planning processes of all spheres of government and organs of state. Alignment between and within spheres of government, and between organs of state, should transpire in both strategic planning as well as in day-to-day decision making, implementation, monitoring and enforcement. Whilst there is strategic alignment between the various policy documents such as the NDP, the NSSD and other policies, there is often a lack of consistency and coherence in the interpretation and implementation of these policies by government functionaries. Currently, project level planning and implementation is characterised by fragmentation and duplication of authorisation processes (including environmental authorisation, permitting and licensing), which often leads to frustration among role-players. Hence there is a need to enhance inter-governmental cooperation and align decision making, taking into account a wide range of factors, but focused on the goal of sustainability or sustainable development.

In order to clearly describe the intentions of this platform, definitions of the terms integration, alignment, coordination and cooperation are provided below. Integration, comes from the Latin word for 'made whole', and means to combine two things so they form a whole. Alignment means the proper positioning of parts in relation to each other. Coordination has a similar meaning to alignment, as the organization of different elements of a complex body or activity to enable them to work together effectively. In the context of this Strategy, both alignment and coordination are about the organization needed (in terms of policies, laws, institutional arrangements and procedures) to bring about cooperative governance, where cooperation means the action or process of working together to the same end. There is thus a progression from alignment (which includes coordination, as they are similar in meaning) through to full integration. Both alignment and integration would improve cooperative environmental governance. In some situations there will be a range of possible outcomes on a progression from alignment to integration, and the text will capture this using the phrase 'alignment/integration', which means 'alignment and where appropriate integration'.

A clear distinction must be made between cross-functional cooperation, the alignment of statutory decision making mandates, and the transfer of decision making mandates. Cross-functional cooperation refers to improved 'cross-pollination' between different functional areas (e.g. between transport and environmental management), leading to integrated thinking in how these mandates

are perceived and implemented. The alignment of decision making mandates refers to the coordination of separate decision making mandates to promote an aligned – and even possibly an integrated – consideration of information, and streamlined or more efficient decision making processes. The transfer of decision making mandates refers to instances where the legislative decision making competencies are transferred to another authority that manages a mandate different from the mandate being transferred. Whilst cross-functional cooperation is an imperative, and aligned decision making is promoted, the transfer of decision making mandates is not supported by this Strategy. The transfer of decision making mandates may require legislative reform or even constitutional amendments.

Special consideration must be given to the relationship between the functional fields of planning and environmental management. Both are cross-cutting functions that traverse – or go across – other functional mandates such as transport, mining, agriculture and tourism. Both functional fields also reflect a high level of overlap, in both strategic and project planning, related to the use of land (i.e. land use zoning in the case of planning, and the wise use of land as a natural resource in the case of environmental management). Therefore, improved alignment between these functions is essential for achieving the goal of 'planning for sustainability'.

This Strategy promotes the alignment of regulatory application procedures and the integration of their associated information gathering processes, but the retaining of different decision making mandates; in other words, aligned procedures leading to separate and different but aligned authorisations. This alignment can be taken a step further by integrating decision making as well as regulatory information gathering processes; in other words, one integrated process (sometimes called a 'one-stop process') and one integrated authorisation (sometimes called a 'one-stop shop'). However in the highly fragmented institutional and legislative context of environmental management in South Africa, the goal of aligned procedures with separate authorisations is more achievable. The advancement towards integrated authorisation should however be aspired to specifically where the mandate of decision making for various different authorisation processes (e.g. environmental authorisation, permitting and/ or licensing) is contained within one department.

Institutional fragmentation can occur between the three autonomous spheres of government in South Africa, namely, the national, provincial and local spheres, with each sphere having environmental management mandates and/or responsibilities. Institutional fragmentation can also occur within one sphere of government due to the existence of various independent and autonomous departments, or line functions, each with its own mandate governing some component of the environment and the use of different resources, for example, minerals, water, land, agricultural resources and heritage resources. There is even a further level of fragmentation within certain line functions, where, for example, waste management, pollution

management, coastal management, impact management and biodiversity management are overseen by different units within environmental departments.

The South African framework for environmental legislation and its implementation is also fragmented. Fragmentation occurs when national and provincial legislation both govern the same mandate, for example, in biodiversity management. Legislative fragmentation is apparent in the various specific environmental management acts that govern different components of the environment, such as water, the coast, air quality and biodiversity. Fragmentation should not always be considered a challenge, as it has the significant benefit that each environmental component (e.g. water, waste, heritage) has its regulatory 'watchdog'. Nevertheless fragmentation is a problem when it results in the duplication of regulatory procedures, causes conflicts (directly or indirectly due to different interpretations by functionaries), and delays decision making. Careful consideration should be given to strengthening the institutional structures that have been established, to support functional alignment and, where appropriate, integration.

In the provincial sphere, the environmental management function is amalgamated with other functions such as economic development, agriculture, tourism, and in certain instances development planning. Regardless of the organisational structure that exists, the alignment/integration of functional areas must not lead to the undermining of any mandate in favour of another. The notion of establishing environmental units within state departments with core mandates other than environmental management is supported. Even though these units have no environmental management decision making mandates, they can contribute towards the execution of these other mandates in a manner that increasingly focuses on sustainable outcomes, which acts towards the goal of cross-functional cooperation. The Constitution requires local authorities to perform their legislative and executive mandates in an environmentally responsible manner. In other words, this environmental responsibility is inherent in all of the constitutional mandates, and does not constitute an additional mandate.

Within the environmental sector, the potential for alignment and integration between the Specific Environmental Management Acts (SEMAs) should be reviewed. Whilst the integration of regulatory processes and decision making is provided for, effective implementation thereof is still to be achieved, inclusive of the National Water Act, 1998 (Act No. 36 of 1998). The alignment/integration of regulatory processes between the SEMAs and the National Water Act (NWA) offers significant opportunities for coordination. There is also scope for improved alignment/integration of regulatory processes between the SEMAs and other statutes, including the National Heritage Resources Act, 1999 (Act No. 25 of 1999), the National Health Act, 2003 (Act No. 61 of 2003) and the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983).

Alignment between planning legislation and NEMA, and their implementation, should also be improved. This requires the allocation of increased resources by the environmental management sector towards improving the environmental planning input into spatial planning, especially the IDP/SDF processes overseen by local and provincial authorities. The respective roles of SEAs and EMFs need to be clarified, as these two instruments are currently being recommended and used interchangeably in response to the call for strategic assessment as part of the SDF process. Regarding regulatory decision making, both NEMA and the Spatial Planning and Land Use Management Act, No. 16 of 2013 (SPLUMA) contain provisions that allow for the integration of information gathering (i.e. application procedures) as well as integrated decision making. The alignment/integration of these regulatory processes should be pursued as a priority. Additional gaps and inadequacies that were identified in legislation governing impact management include occupational health and safety requirements, or any other consideration of the effect of activities on third party health, climate change considerations, disaster management requirements, the wise use of natural resources, the creation of sustainable communities that advance inter and intra-generational equity in the use of resources, the adoption of a life cycle assessment approach to the evaluation and mitigation of impacts, and the adoption of a full cost-benefit accounting approach which incorporates consideration of socio-ecological impacts when evaluating the viability of projects. In future, a strong focus should be placed on the establishment of effective institutional frameworks to facilitate cross-functional cooperation, alignment and integration when implementing regulatory functions. Review of policies and legislation should form part of the continuous improvement process.

The revival of the National Environmental Advisory Forum (previously in Chapter 2 of NEMA) is recommended to coordinate and harmonise environmental policies, plans, programmes and decisions of various national, provincial and local spheres of government, at a strategic level. Strategic Environmental Forums should be established to facilitate cooperation and alignment between different sectors and between different spheres of government. These forums could support and coordinate the formulation of strategic environmental plans, for example, Environmental Implementation Plans (EIPs) and Environmental Management Plans (EMPs) as required by Chapter 3 of NEMA (including the monitoring of the implementation of EIPs and EMPs against sustainability targets), EMFs, SEAs, the application of spatial instruments and other cross-sectoral planning initiatives, the alignment/integration of regulatory procedures (i.e. application processes and information requirements) and where appropriate, the alignment/integration of decision making in regulatory processes.

Forums between provincial and local government should be established, and maintained, in terms of the MSA, SPLUMA and NEMA to facilitate the integration – and short of that – the coordination and alignment of policies, plans and programmes (especially SEAs, EMFs and SDFs), based on

the achievement of determined sustainability objectives and targets, as well as the requirements contained in provincial EIPs. The coordination of regulatory decision making processes related to environmental and land use management applications for specific projects could be achieved through the establishment of Environmental Task Teams within – and across – all spheres of government.

Institutional frameworks need to be refined to improve coordination and alignment across different sectors and between and within spheres of government and organs of state, so that strategic frameworks and plans are aligned/integrated, environmental management is integrated into local decision making, and national, provincial and local decisions and implementation are in alignment. All strategic spatial planning frameworks and plans, such as SDFs, whether national, provincial or local, should be informed by adopted strategic environmental plans. This Strategy promotes the notion that environmental planning represents an environmental management mandate that has to be addressed by environmental authorities in both national and provincial spheres of government. This does not imply that environmental authorities are responsible for compiling all environmental planning inputs. Environmental authorities must, however, retain the mandate to specify content and quality assurance requirements, to undertake quality control (through evaluating the extent to which environmental planning information was adequately incorporated into development planning frameworks), and to set requirements for reporting on environmental performance.

Provincial EIPs should require municipal SDFs to include a strategy which indicates how compliance with the provincial EIP will be achieved, and which stipulates the basis for performance reporting by municipalities in terms of section 16(4) of NEMA. This section places an obligation on provincial governments to support and monitor municipalities in terms of provincial EIPs and the NEMA principles. More guidance is required on the nature, intent, content, timing and scale requirements of strategic environmental planning instruments, to ensure their effective integration into strategic development frameworks. Appropriate criteria need to be provided for the compilation and adoption of such instruments and tools. It is proposed that mandatory environmental planning instruments (such as SEAs and EMFs) be applied to sectoral and regional policies, such as those in transport planning, agriculture, aquaculture, and forestry. Such environmental planning should be undertaken with the guidance and support of the Strategic Environmental Forums. Special attention should also be given to strengthen and secure the strategic environmental planning mandate in NEMA, as well as in the drafting of provincial EIPs. Care should be taken to ensure that the environmental planning mandate is retained as the mandate of environmental authorities, if not in the compilation of sectoral environmental plans, then at least in stipulating the content requirements of such plans and in exercising a quality assurance function.

Monitoring leads to adaptive management

Building Platform 3: Monitoring and evaluation of socio-economic, ecological and IEM systems and processes lead to adaptive management.

IEM is a cyclic process and should take place within a management paradigm with relevant 'Plan', 'Do', 'Check' and 'Act' phases. Specific questions need to be answered during the relevant phases: 'Plan' – what are the determined sustainability objectives, indicators and targets; 'Do' – who is responsible for implementation and how and when should implementation transpire to achieve sustainability targets; 'Check' – has implementation transpired in line with implementation plans and has it achieved the sustainability targets; 'Act' – what corrective actions need to be taken to address shortcomings if the implementation has not been successful or sustainability targets have not been achieved. All the phases of management should transpire for a system to be successful.

In the current system, the 'Check' and 'Act' phases were neglected. It took 10 years before the current IEM system, based on EIA as the only compulsory tool, was reviewed within the 'Review of the Effectiveness and Efficiency of EIA' (REE) study. The IEM system therefore needs to be monitored and evaluated on a more frequent basis against the pre-determined sustainability objectives, indicators and targets, to determine if it is successful and in fact moving towards the attainment of sustainability. Furthermore, internal audits should be regularly conducted to ascertain the quality of the system, whether the system is being implemented properly, whether the processes and procedures are being adequately maintained and monitored, and if there is consistency in decision making. If needed, adaptive management should take place earlier rather than later.

Further to the above, the regular evaluation of other sectoral and strategic plans impacting on the environment should become a priority. The success of IEM is dependent on the successful alignment between sectors. Other sectors should also take ownership of the sustainability objectives, indicators and targets, as it is not and cannot be the sole responsibility of environmental authorities to achieve the targets if the country is to be set onto a sustainability path. The proposed Strategic Environmental Forums as well as the proposed re-instatement of the National Environmental Advisory Forum can play an important role in this regard.

Conflict between stakeholders should be avoided, in the first instance, by applying best practice in all IEM systems and processes as well as incorporating the NEMA principles into all sectoral policies and plans (e.g. through mandatory SEA). In the second instance, the extensive provisions in Chapter 4 of NEMA regarding 'Fair Decision-making and Conflict Management' should be upheld and effectively implemented. These provisions should be utilized if environmental issues have not sufficiently been integrated into other sectoral plans, or if sectoral plans are in conflict with

strategic environmental plans. Environmental conflict resolution may or may not include a third-party mediator or facilitator.

The ‘Act’ phase should address the shortcomings in the current systems if the pre-determined targets are not achieved, or if the quality of the system is questioned. This may include various actions to be taken from the identification, review and adaptation of unsustainable sectoral plans in other departments, to reforming the total IEM system or its legislation, or bolstering other on-going actions such as capacity building, amendments to regulations, and adapting or modifying instruments and tools.

It is necessary to understand that the management of a listed activity may include a full management cycle. For example, the planning of an activity will define a sustainability vision and desired sustainability objectives, indicators and targets for the proposed activity, specify how the design of the proposed activity was adapted to meet the sustainability objectives, followed by the identification and evaluation of potential residual impacts. Implementation of the activity should take place in accordance with the conditions of approval laid down in an Environmental Authorisation, which implies that such conditions need to be clear in terms of the sustainability performance that is required. Monitoring should take place against the desired targets and stipulated conditions, while enforcement should be triggered in response to non-achievement of set targets and conditions.

At present the IEM system is mainly dependent on a command and control governance model. Monitoring and enforcement are mostly based on a penalty based system (either fines or criminal prosecution) and not a ‘carrot and stick’ type of approach. A shift towards an economic, fiscal or civil (an agreement-based) governance system should be facilitated over the long term, whereby incentives, such as green rating systems, are implemented to get all role-players mobilised toward a sustainability path. It is however acknowledged that this will not be an easy task, nor is it going to happen overnight. The use of heavy fines for offenders should still be used when necessary, in addition to the move towards co-regulation. The National Environmental Management Laws Second Amendments Act, 2013 (Act No. 30 of 2013) (NEMLA 2) allows for harsh fines of up to R5 million per specific listed activity and does not allow for rectification of unlawful activities but does allows for the issuing of an environmental authorisation for activities that have commenced unlawfully. Criminal prosecution can still be instituted for the unlawful commencement even where a subsequent S24G application for authorisation has been submitted and authorised.

Any person or group of persons should be aware that they may monitor the implementation of environmental laws and regulations, for example, the conditions of approval in an Environmental Authorisation, and can seek appropriate relief in respect of any breach or threatened breach of any provision of NEMA. Whistle blowers must be protected in this regard. Citizen channels for whistle

blowing or, more routinely, to provide feedback to authorities could be substantially improved, thereby enabling citizen participation in monitoring and enforcement.

Local government also has responsibilities to implement environmental standards or other tools on a micro level, as well as the conditions of an Environmental Authorisation. If environmental conditions and/or standards have been compiled as part of an integrated process, utilising the Strategic Environmental Forums for integrated strategic planning and Environmental Task Teams for decision making, no conflicting conditions should prevail between land use and environmental decisions and their respective conditions and standards. Provision should however be made for a clear framework within which local authorities can monitor and enforce environmental conditions of approval and standards, in the implementation stage of environmental instruments and tools.

Effective environmental management instruments and tools

Building Platform 4: Environmental management instruments and tools are effective in achieving the objectives of IEM.

Chapter 5 of NEMA identifies various environmental management instruments and tools for application in South Africa, including Strategic Environmental Assessments (SEAs), Environmental Management Frameworks (EMFs), Environmental Impact Assessments (EIAs), Environmental Management Programmes (EMPrs), environmental risk assessments, environmental feasibility assessments, norms or standards, spatial development instruments, or any other environmental management instruments and tools that may be developed over time. Chapter 3 of NEMA identifies further environmental management instruments to be used by national and provincial government departments in the form of environmental implementation plans (EIPs) and environmental management plans, or consolidated environmental implementation and management plans. Of these, EIA and EMF have been regulated in legislation. A wider suite of instruments and tools is also available in other environmental and non-environmental legislation (e.g. SPLUMA), including integrated environmental programmes, bioregional plans, and permitting and licensing requirements, strategic assessment of the environmental pressures and opportunities amongst others.

Although EIA is the most commonly used and the only compulsory tool in South Africa, it is not always 'fit for purpose', for instance, EMFs and SEAs are better suited to delineate the strategic context and set sustainability objectives and targets. The key principle of this platform is that attainment of the objectives of IEM requires a 'progression' of instruments and tools, in which the most suitable tool for a given proposal can be used.

There is a widespread view that the planning component of IEM is poor, and that better planning would both improve IEM and potentially reduce the plethora of individual assessments that are currently required. Strategic environmental planning thus needs to be implemented as a priority at national, provincial and local spheres of government, and for the whole country. In addition, the overemphasis on the pre-authorisation component of project assessment tools in IEM to date has been identified as an impediment to effective impact management and the attainment of sustainability. If the management component of IEM is based on the well-recognized management cycle of 'Plan, Do, Check and Act', then it is clear that a single tool cannot possibly meet all four components and that a progression of tools is needed, each applying to the specific outcomes required of the four management components.

The desired output of the strategy is thus a progression of instruments and tools, with robust and effective information transfer between the different instruments and tools. A 'progression' implies

that instruments and tools complement one another. Each instrument or tool provides specific information which, in combination with that provided by the others, broadens understanding of environmental opportunities and constraints for sustainable development, and improves decisions and implementation.

A concern expressed by various participants in the Strategy formulation process is that the 'regulatory certainty' of the clear prescriptions that apply to EIA will potentially be lost in the application of the progression of EM instruments and tools, and that there will be too much discretion left in the hands of the authorities. The principle needed to address this concern is not to allow the authorities to simply choose the instrument or tool they think suitable, but rather to develop detailed criteria which serve to ensure that instruments and tools are used correctly and consistently. The regulatory certainty that currently applies in respect of EIA needs to be maintained for all instruments and tools, by applying the principles underlying the Strategy which are described at the beginning of this document.

This progression should enable environmental planning, with potentially fewer assessments needed. Activity specific tools are typically more reactive, with a focus on prevention at best, but mostly on impact minimisation. The broader instruments are required to address issues such as sustainability objectives and targets, to ascertain the need and desirability of activities within certain environmental zones, to avoid environmental impacts, to manage cumulative impacts, to advance biodiversity conservation, to set acceptable limits for trade-offs, and to identify offsets. The overall objective is not just to protect the status quo, but also to improve the state of the environment.

The concept of a progression should be developed into a cohesive, comprehensive and coherent framework in which all the various EM instruments and tools – which give effect to IEM – are located in relation to one another and to the levels and different stages of development planning. The framework should address issues such as the failure to incorporate environmental concerns into all stages of the development cycle, from planning to monitoring and evaluation, and the incorrect or inappropriate application of any of the instruments or tools.

In addition to improving the application of existing EM instruments and tools, new ones should be developed where gaps become evident. Instruments such as Environmental Outlook reporting, SOER, SEA and EMF and other strategic spatial environmental tools need to be developed or more widely used.

Legislation will remain the primary mechanism to identify and formalise the adoption of instruments and tools. As is currently the case, lists of activities will be based on the sensitivity of the receiving environment, limits set for environmental aspects, and the type and scale of proposed activities.

The use of EM instruments and tools for non-listed activities in the development planning cycle will be guided by the framework for progression, and objective criteria need to be developed for their selection.

Three lists of activities are proposed, as follows.

List 1 consists of activities that will always require a full EIA and an environmental authorisation, based on the potential of such activities to have a significant impact on the environment. The EIA should be based on the full life cycle of such activities, in order to deal with potential legacy issues, which are especially important in the context of mining but may also apply to other activities.

List 2 consists of activities that will require an environmental authorisation based on the possibility that such activities may have an environmental impact. In this case, however, the decision on whether to allow the activity to proceed or not will be based on the information provided by a 'fit for purpose' instrument or tool, which could be specified by the competent authority applying the principles underlying the Strategy. These instruments or tools could include EIA, BA, LCA, specialist assessments or others.

List 3 consists of activities where impacts are known and can be mitigated subject to implementation of certain norms, standards or conditions. In this case no form of assessment is required and no decision is required, although activities on this third list could require that the proponent notify the competent authority. A standard may also require for example an EMPr (generic or to be approved by the CA), a code of conduct, compliance monitoring reporting (to be submitted to the CA), standard operating procedures etc. In local authorities the norms, standards or conditions could be published in a by-law, in which case authorisation could occur through the approval of site development plans and building plans. The local authority would need to show relevant capacity and skills to monitor and enforce the norms, standards or conditions. The competent environmental authority would however still retain a mandate to monitor and enforce, particularly where there is shown to be a lack of compliance.

In addition to the use of listed activities, competent authorities should have the ability and discretion to identify and choose fit for purpose EM instruments and tools based on pre-determined objective criteria (as described in the principles underlying the Strategy) and in line with approved/adopted strategic environmental plans that result from the application of environmental instruments and tools. These strategic plans could be used by the authority to identify specific geographical areas where certain listed activities could be excluded from the need for environmental authorisation, or where EIAs can be substituted by other EM tools such as specialist assessments, standards, and EMPs. Equally, such strategic instruments or tools could also be used to demarcate areas where no activities can be allowed, or at least to restrict activities. The

prohibition or restriction of activities would be driven by the need to avoid the loss of important social and ecosystem functions.

In addition to the efforts of competent authorities in the environmental sector, all other government departments should provide practical information on the State of the Environment and produce Environmental Outlook Reports, making provision for this activity within their environmental implementation plans (EIPs) and environmental management plans. The framework for such information provision should be provided by DEA, based on the intentions of the NSSD, the NDP, Presidential Outcome 10, the MTSF and the pre-determined sustainability objectives, indicators and targets.

The implementation of these actions will see achievement of the following broad outcomes. Strategic environmental planning will be effected through defining sustainability objectives and targets, in order to provide an overarching framework for effective decision making. Within the context of this framework, different instruments and tools will be applied to ensure that all components of the management cycle are effectively implemented. Legislative mechanisms will be used to provide formal recognition to the most apposite instruments and tools in different contexts, to ensure that the tools are fit for purpose and not used capriciously.

In summary, the adoption of these various instrument and tools would then allow a broader range of environmental assessment and management approaches for certain activities that are currently listed in the EIA regulations. In certain instances activities currently requiring authorisation may receive such authorisation without conducting an EIA, after applying other instruments or tools. In other contexts, authorisations may no longer be required, given that potential impacts will have been dealt with by appropriate instruments earlier in the planning cycle. Activities currently requiring an environmental authorisation may also be delisted as a function of characterising certain geographical areas where the receiving environment is unlikely to be adversely affected by such activities. Finally, and of critical importance, all of the above will unfold with the same level of regulatory certainty that currently exists for the EIA process.

Professional environmental practitioners

Building Platform 5: Environmental practitioners and specialists are professional, ethical, objective and independent.

There is frustration with the unprofessional conduct of some environmental practitioners, which has tainted the industry and caused mistrust. Members of the public find it difficult to draw attention to such problems and have them addressed in individual EIAs. Professional practice thus needs to be subject to quality assurance, as a priority within the environmental sector. Professionalism implies appropriate training, technical competence, relevant experience, independence, objectivity (with regard to knowledge), impartiality (with respect to decision making), and ethical behaviour.

In order to ensure objectivity and impartiality in the work of practitioners, the current EIA regime has focused on the regulatory requirement that EAPs must be independent from developers and their planning and design teams. Whilst the independence requirement is rightly focused on ensuring that there is no conflict of interest for EAPs with regard to personal financial gain from the implementation of a development, this requirement militates against an active role for environmental practitioners and specialists in project planning and design. The Strategy therefore recommends that the independence requirement for EAPs be reviewed and revised, retaining the requirement that there must be no conflict of interest, while facilitating the formation of interdisciplinary teams tasked with the formulation of development proposals informed by environmental considerations early in the planning process.

The Strategy requires that environmental practitioners, officials and specialists are professional, ethical, objective and independent in their conduct. The establishment of the Environmental Assessment Practitioners Association of South Africa (EAPASA) is a step in this direction, but EAPASA is not a statutory council and does not include all related environmental disciplines or professions. In order to improve the attributes and behaviour of practitioners, the Strategy proposes that a statutory Council for Environmental Professionals is constituted, with sub-bodies – professional associations – representing the various disciplines (e.g. EAPASA). Registration with the Council and membership of an appropriate association will be compulsory for any practitioner working in the field of environmental assessment and management.

The Council and professional associations should implement a classification and categorisation system for environmental practitioners, so that all professional functions within IEM processes are implemented by appropriately qualified and competent registered practitioners, officials and specialists.

Practitioners should be classified according to their competencies and skills, to qualify for work as Environmental Assessment Practitioners, Public Participation Practitioners, Social Impact Assessment Practitioners, Environmental Control Officers, Environmental Planning Practitioners and Heritage Assessment Practitioners. The Strategy recommends that each group has their own professional association, under the auspices of the Council for Environmental Professionals.

Categorisation relates to the progression of a practitioner from their tertiary studies, through to registering and acting as a Candidate EAP working under the mentorship of a Registered EAP, and beyond that being recognised as a Master practitioner after an extended period of practice. Whilst the outline of categories above currently applies primarily to Environmental Assessment Practitioners, this is a reflection of the current progress towards registration of EAPs, and the principles – if not the detail – can be more broadly applied in future to other practitioners working in the IEM sector. For example, according to the Environmental Assessment Practitioners Association of South Africa (EAPASA), a person will be able to register with EAPASA as a Candidate EAP in future if they have an Honours level qualification (Level 8 on the National Qualifications Framework) which has been accredited by the Council on Higher Education (CHE) through its permanent committee that deals with the accreditation of programmes, the Higher Education Quality Committee (HEQC). Programme accreditation is done using a set of HEQC criteria and the exit level outcomes of the national qualification 'National Certificate: Environmental Assessment Practice', which is registered with the South African Qualifications Authority (SAQA) as Qualification ID 61831. In future, the various professional associations should liaise with institutions of higher learning to align curricula, as well as accredited training courses, to IEM systems and processes, and to accredit programmes to the exit level outcomes of registered national qualifications.

The Strategy identified a need to incorporate education about sustainability into the curricula of built-environment disciplines such as planning, landscape architecture, architecture and engineering. An option being pursued by EAPASA is to encourage built environment programmes – such as Masters in City and Regional Planning, Masters in Landscape Architecture, or a four year Civil Engineering degree – to seek accreditation as meeting the requirements of the national EA qualification.

The Council and each professional association should develop and oversee the implementation of codes of conduct, disciplinary procedures and codes of ethics. Practitioners and officials should be required to formally commit to upholding such codes on their accession to the professional register. Practitioners who fail to meet the requirements of professional and ethical conduct may be suspended or disbarred as members of professional associations. Continuing Professional Development (CPD) should form part of the requirements for continued registration with the Council and the relevant professional association(s), in this manner ensuring that their members

remain up-to-date in their skills and training. In addition, the various professional associations should have internship systems for students in training and candidate practitioners.

During Project Steering Committee meetings for the Strategy, much debate centred on the perception that findings of EIA studies and reports are written in a manner which either unconsciously or deliberately supports the proponent or applicant paying for the services of practitioners and specialists. There are two main proposals to address this concern. Firstly, as outlined above, the Strategy proposes that professional associations must deal with unprofessional or unethical conduct. Secondly, a robust mechanism for peer review must be developed and implemented as a form of self-regulation of professional practice, to uphold the principles of objectivity and impartiality in the pursuit of sustainable development. Although EIAs are already reviewed for accuracy and completeness by various role-players, there is room for further improvement to the quality of the work and the credibility of assessment processes. The Strategy supports regular peer review as a means to entrench professionalism and to improve the quality of work.

Finally, the facilitation of meaningful public participation requires skills which are not necessarily widespread in the environmental sector. Unlike other disciplines in environmental management where relevant expertise is provided routinely, public participation is not typically conducted by appropriately trained specialists. Thus the Strategy recommends that a professional association for Public Participation Practitioners be established to register specialists skilled in the social sciences, under the umbrella of the Council for Environmental Professionals.

Credible, up-to-date, accurate and accessible information

Building Platform 6: Environmental information and information management systems are credible, up-to-date, accurate and accessible to all role-players in IEM systems and processes

The underlying premise of sound decision making is that access to reliable information – both in terms of knowledge and values - should lead to better decisions. In Integrated Environmental Management (IEM) informed decisions lead to more sustainable practices, which ultimately result in an improved quality of life for people.

As collecting and verifying information is time consuming and costly, it is sensible to reduce duplication in effort. The use of robust accessible information systems and appropriate systems to manage the information supports the identification and prevention of duplication.

The 1992 Earth Summit formalised the right of citizens to environmental information, and underscored their rights to know about environmental hazards in their local area and to participate in decision making processes. The South African Constitution (RSA, 1996: Section 195(g)) describes how "*transparency must be fostered by providing the public with timely, accessible and accurate information*". This platform on environmental information systems is however not only about providing relevant information to the public, but is premised on the need for such systems by all of the role-players involved in IEM.

The vision for environmental management information systems is that data and information are credible, up-to-date, of adequate quality, readily available and easily accessible.

Adequate infrastructure and resources for the management and maintenance of information need to be provided. Inadequacies in access and technology should be identified, and sufficient resources secured to implement and maintain the information system, including qualified staff, hardware, software, bandwidth, storage capacity and networking infrastructure. A qualified project team should be mandated to achieve defined infrastructure needs, to manage the systems and any implementations, including the system integrations and improvements or expansion in the future. As the skills and resources may be provided by external agencies, service level agreements should be concluded.

Systems required include Geographic Information Systems (GIS) to support spatial planning and environmental work; an information system of all non-spatial information such as reports and assessments stored in digital format; a tracking system for applications and a catalogue of available information.

Geographic Information Systems typically indicate spatial information in layers. The GIS layers should indicate existing environmental attributes and sensitive environmental features, exclusion zones identified in EMFs, applicable environmental guidelines, and existing or proposed developments. The system should also include the SDF layers generated by local and provincial government, as well as bioregional plans and other strategic environmental instruments – such as open space systems or frameworks – which have been integrated into SDFs.

The GIS system should store the spatial data layers developed as part of specialists reports in EIAs and data layers generated through other instruments such as strategic planning, environmental outlook, desired state of the environment reporting, SEAs, EMFs, EIPs etc.

A central catalogue of available data and information should be maintained and be electronically accessible. The catalogue should manage information is such a manner that users are directed to where information is available and can interrogate its fitness for use. Typically information about information (metadata) guides users on standards for capturing, sharing and fitness for use of information. Metadata may include various veracity checks. Users of the central catalogue should be able to access information and data directly, or through links to custodians of the information.

A dedicated management system should be implemented to track the planning and authorisation of all proposals subject to EM instruments, tools and processes, which should be available to all role-players including the general public.

The tracking system should be expanded to monitor the progress of processes related to all EM instruments and tools including strategic instruments, NEMA mining applications and various other licenses related to environmental management.

An information system should store in digital format all IEM material submitted, including EIA reports, specialist studies, public participation records, issue and response reports, any annexures, Environmental Authorisations, licenses, monitoring reports, registers of complaints, registers of non-compliance, compliance notices, remedial actions adopted and legal actions taken, and other related information. The information will be voluminous and seemingly disparate, and the system will need to allow for simple and complex searches. Information should also be ‘tagged’ to allow for thematic search such as by location, by EAP, by activity, and so on.

It should not be necessary for a member of the public to be a registered I&AP to view the range of applications in a particular region.

Information provided for IEM is deemed to be in the public domain and without proprietary rights. Exceptions should be specifically indicated, assessed and managed.

The strategy recommends that information on activities which impact adversely on the environment must be publically accessible and in particular the ongoing data and reporting which related to monitoring and adaptive management.

Standards for data and information should be implemented, reviewed and developed as needed, serving to make more meaningful information available to role-players. An integrated working group should be established to develop data quality specifications, by combining representatives of all current working groups (from all spheres of government) who are focusing on data and information relevant to IEM systems and processes.

The information systems used for environmental management and reporting in different spheres of government should be standardised, so that the same system, software solution, or product is used for the same function (e.g. GIS) across all spheres. Where this is not practical due to legacy systems and license agreements, the systems should have the ability to interface and a longer term alignment of systems should be planned. Data quality specifications should consider future needs and should not be restricted by the current availability of data.

Local knowledge is seldom catalogued or made widely accessible. The Strategy makes provision for an information system for documenting, cataloguing and disseminating tested local knowledge that is accessed during the application of EM instruments and tools, and this information should also be incorporated into the GIS systems where appropriate. Provision should be made for the verification of data, information and knowledge, and attaching confidence indicators to particular data, which will add credibility. A range of indicators or flags can be used to signify that particular local data/information has been verified by a number of local persons; by users of the information; and by outside experts.

The information systems must be accessible to authorities in provincial, district, metro and local government, allowing for a bi-directional flow of information to integrate, update and interface data.

An awareness campaign should be implemented to promote the EM knowledge and information systems to all role-players, including the general public. Manuals should be published to assist role-players to access and use the various systems. Digital manuals are preferred as these can be updated without incurring the delays typical with printed manuals.

Environmental awareness and capacity building

Building Platform 7: All role-players are environmentally aware and are capacitated to engage meaningfully in IEM systems and processes.

Enhancing environmental awareness and building capacity is a significant concern, not only in South Africa but internationally. The United Nations Environmental Programme (UNEP) has identified as its second highest priority the need to transform human capabilities to meet environmental challenges. (UNEP, 2012: p7) This need has been identified in the context of unprecedented pressures arising from population growth, urbanisation, unplanned and poorly planned development, unsustainable exploitation of natural resources, the proliferation of invasive species and climate change. These and other pressures are causing rapid degradation of the environment and loss of biodiversity. Increasingly, natural infrastructure is being compromised, resulting in adverse impacts on nature's ability to provide ecosystem services for society.

While the management of environmental issues tends to be left to environmental departments and professionals, there are capacity limitations within the environmental sector in South Africa, let alone the more acute limitations outside this sector. In many instances role-players do not thoroughly understand the significance of the environment, the mechanisms (instruments and tools) that exist to facilitate environmental management, and the role of public participation in IEM processes.

Environmental awareness campaigns and capacity building programmes apply to all of the building platforms identified by this Strategy. These campaigns and programmes should address and effectively communicate information about key environmental issues, how these issues are impacted by development, and the concept of sustainable development. The Strategy recognises that all IEM functions depend on adequate levels of environmental awareness and capacity building. Role-players need to understand their responsibilities and rights as they work to achieve sustainability. There is thus a need to create a clear and consistent understanding of the NEMA principles which serve as the general framework for environmental planning and implementation. This can be achieved through awareness campaigns for the public (including developers) and in-depth training programmes for environmental practitioners, government officials and other built-environment professionals on the application of the NEMA principles in the practice of IEM.

The outcome of awareness campaigns and capacity building programmes should be significant changes in attitudes, values and behaviour, and associated adaption in the way that environmental management takes place. The awareness and capacity needs of all of the role-players in IEM systems and processes should be carefully assessed, as well as their current capacity, in order to tailor objectives to the identified needs of specific groups. These may include organs of state from

all spheres and sectors, researchers, NGOs, trade unions, consumers and the private sector organisations involved in development. Young people need to be explicitly included through integrating knowledge of environmental rights and even the NEMA principles into national educational programmes.

Capacity building for practitioners is addressed by the Strategy, including a requirement for affiliation with professional associations which can provide and oversee the implementation of codes of conduct and ethics. These associations should further require continuing professional development as a prerequisite for maintaining professional registration.

Guidelines to assist role-players gain a better understanding of national legislation should be developed by the national sphere of government, while provinces should also develop guidelines as needed, in particular to support the environmental responsibilities of local authorities. Capacity building needs for local government officials include training on the integration of strategic environmental and strategic land use planning (e.g. EMFs and SEAs influencing SDFs and IDPs), and the incorporation of environmental issues into land use decision making. Skills are also required in the identification, evaluation, mitigation and management of possible environmental impacts caused by non-listed activities.

Other professionals such as town planners, engineers, architects and landscape architects are in many instances directly managing and undertaking environmental management projects. Consequently the Strategy identifies the need to ensure that these professionals develop appropriate skills to advance IEM as conceived in NEMA.

Developers and contractors need to receive general environmental awareness training. Developers have to be aware of the consequences of irreparable environmental damage which may be caused by their projects. Mechanisms to encourage corporate social investment spending on environmental training should also have a high profile.

Marginalised individuals and communities should be provided with improved access to IEM systems and processes. One of the measures of successful public participation is the ability of people to influence decisions and outcomes. In EIA processes, for example, the degree of influence or power of individual stakeholders depends on having time to attend meetings, the ability to understand and review lengthy technical documents, access to the internet, and knowledge of environmental rights. In South Africa these challenges to citizen participation are exacerbated for disadvantaged groups and communities who have limited education and skills, and lack financial and other resources. Such groups tend to be uncertain about their rights and responsibilities, and lack access to decision making, follow-up monitoring and compliance actions.

Providing access to the IEM processes for marginalised individuals and communities would be improved by translating application forms, guidelines and documents into a variety of languages. Marginalised groups may be apprehensive about formal public participation processes, and the practitioner will need to adjust processes to accommodate their needs. The Strategy thus recommends that enhanced capacity building regulations for marginalised communities be triggered in the applications for listed activities that will have significant impacts on the environment. Government departments should further roll out capacity building programmes in geographical areas where environmental planning projects (such as EMFs) are undertaken.

Finally, the Strategy recommends an investigation to assess the possibility of establishing and funding quasi-independent advice offices to assist marginalised communities to participate in IEM processes, and comparing the advantages and disadvantages against the existing DEA supported initiatives by parastatals and universities.

Public participation informs environmental governance

Building Platform 8: The purpose of public participation is understood and the process is used by all role-players in IEM systems and processes to inform environmental governance.

The activities which form part of public participation have to allow for meaningful engagement with stakeholders in order to meet the purpose and realise the full value of public participation.

Specifically, public participation is intended to encourage citizens to be part of the decision-making where there are impacts in their local community. Our constitution (RSA, 1996: section 195(e)) states "*People's needs must be responded to, and the public must be encouraged to participate in policy-making*."

The purpose of public participation includes to -

- Encourage the public to be more engaged in the decision making processes that have an impact on their local community
- Advance the public's understanding of how government works and create the opportunity to access governmental decision-making processes
- Provide the public with the opportunity to influence and participate in development programmes, plans and projects. informing and improving decision-making
- Provide the opportunity to be responsible and active citizens; and receptive and accountable decision-makers

The public participation process must identify key stakeholders in order to promote meaningful and proactive engagement between decision makers and affected stakeholders. Such engagement has the potential to contribute to sustainability.

A recurring complaint from the public is that they are not informed of proposed developments. The identification of stakeholders is a critical step, and sincere efforts to notify and engage will do much to improve the process.

The International Association of Public Participation has described meaningful public participation as having certain core values, including the promise that the public's contribution will influence the decision, that they are informed how their contributions affected decisions, and that participants give input on designing how they participate (IAP2, 2007,p1).

The Southern African Institute for Environmental Assessment (SAIEA) has developed principles to articulate best practice for public participation in an environmental assessment process. The

principles include adding value, being transparent, including all relevant stakeholders, fairness, accountability for behaviour and actions, managing conflict and promoting public interest, redressing social inequity, addressing capacity limitations in the process, accommodating process changes, and constant improvement. (SAIEA, 2004,p11)

For different instruments and tools, for different project and geographic areas the extent of public participation has to be adapted. Every public participation process should clarify what the engagement is intended to achieve, for example, mere compliance with the minimum requirements. Leaving the impression that public influence is greater than it is, leads to distrust.

The extent of engagement should take into account a number of factors such as the objectives for engaging, the social profile of stakeholders, context-related issues (such as the levels of literacy), the spatial scale of the proposed activity, the number of people involved, the resources available for conducting the process, legislative requirements and the norms and societal values defining a particular context.

Public participation guidelines stress that for effective, efficient and equitable public participation there should be clear, specific, achievable objectives for each stage of the process, taking into account the context of the proposal or activity and the extent of the engagement required.

To this end, the Strategy proposes that the extent of public participation is appropriate to the instrument or tool being used, and the complexity of the proposal under consideration. The extent of public influence possible in the progression from policy to plan, and from plan to programme and project should be clearly stated. The extent of public participation also has to be adapted for different proposals and geographical areas. Every public participation process should clarify what objectives the engagement is intended to achieve, even if it is, for example, mere compliance with minimum requirements. Failure to clarify the purpose of public participation in a specific situation can lead to distrust, particularly if the impression is created that the public's influence is greater than is intended.

The extent of engagement should take into account a number of factors such as the objectives for engaging, the social profile of stakeholders, context-related issues (such as the levels of literacy), the spatial scale of the proposed activity, the number of people involved, the resources available for conducting the process, legislative requirements and the norms and societal values defining a particular context.

The Strategy recognises that public participation can be used as a form of protest, and can delay projects. The proposal to address the opposing opinions of 'not enough' and 'too much' is to introduce a Public Participation Plan, for strategic interventions involving the application of spatial planning instruments, and for environmental assessments of significant proposals or activities.

The plan will set the scope of the public participation, and has to be approved. In order to arrive at a plan, a social probe is needed to establish the social structures and limitations which need to be addressed in order that the public participation can fulfil its purpose meaningfully. The probe will identify the 'who', 'how' and 'extent' of public participation, to be elaborated in a Public Participation Plan.

Poor quality in public participation is linked to the perception of unprofessional and unethical behaviour of practitioners, including reviewers (officials). There is still a gap between principles and practice in spite of all the guidelines and best practice information to inform the conduct of public participation.

The National Environmental Management Act (NEMA) and regulations describe how public participation should be implemented, and further requires an indication of how the comments received from interest and affected parties have been addressed.

In spite of comprehensive guidelines which address many of the shortcomings identified with public participation, dissatisfaction with public participation still occurs.

Some of the shortcomings in public participation are addressed by Building Platforms 5, 6 and 7. The first calls for ethical, objective and independent professional practitioners and specialists, while appropriate access to information and capacity development also support better public participation.

The strategy recommends that guidelines for public participation are re-visited, widely promoted and applied. The guidelines should describe the purpose of public participation, and define the extent of appropriate engagement for the scale of the project, programme or plan; the activity; the sensitivity of the bio-physical environment; the cultural or historic value of the setting, and the particular socio-economic conditions.

The failure to implement the guidelines needs to be addressed, both through professional ethics (Platform 5) and procedurally.

The requirements of the regulations are the minimum effort expected, and though the reviewer might confirm that the required steps have been followed, the effectiveness of public participation is not evaluated. This Strategy proposes that public participation processes should also be subject to peer review (as in Building Platform 5, Pillar 8).

The Strategy further recommends that in selected IEM applications, public participation and/or social science practitioners are included in the team managing public participation processes. While Platform 5 deals with a classification and categorisation system for environmental professionals in the longer term, to ensure that all professional functions within IEM processes are

implemented by appropriately qualified and competent registered practitioners and specialists, the focus of this recommendation is rather on the short term need to involve specialists with social science qualifications, skills and experience in selected IEM processes.

The World Bank Environmental Assessment Sourcebook, Update 5, on Public Participation (1993: p. 8) stresses the importance of drawing on social science expertise in environmental assessment practice, and recommends as follows:

> "*The skills of social scientists are needed to manage the EA consultation and participation process. There are four primary areas where these skills are most used: (1) identification of participant groups, stakeholders and other social groups in the project's area of influence; (2) design of consultation/participation strategies; (3) design of mechanisms for conflict management and resolution; and (4) institutional analysis*."

Social scientists have the specialist knowledge to identify and understand cultural practices; they can analyse social networks and power (im)balances, to better understand and manage conflict; and they have the skills to understand the meaning that people attach to elements of the environment and how proposals would affect livelihoods and well-being.

A screening mechanism should be developed for deciding which selected proposals require a public participation and/or social science practitioner to be a member of the study team, in order to conduct an effective social probe to inform the development of a Public Participation Plan; to assist in managing the public participation process, and/or to undertake a more detailed Social Impact Assessment. One such screening mechanism would be controversial proposals, while another would be to require that a public participation and/or social science practitioner is involved when a Public Participation Plan is required.

Transformation

Building Platform 9: A transformed environmental sector exists.

While the transformation of the environmental sector within government has advanced, the private sector does not reflect the national demographic profile. The development of a Transformation Code or a Sector Transformation Charter is proposed to speed up transformation. The transformation of the NGO sector needs to be investigated.

The environmental sector should consider the extent to which the Minister of Trade and Industry's published codes of good practice, (RSA, 2013) which will be in operation by 30 April 2015, are adequate for the sector. If the identified stakeholders agree that more specific actions will accelerate the attainment of the objectives of the Broad-Based Black Economic Empowerment Act, Act No. 53 of 2003 (B-BBEE Act), then a Sector Transformation Charter should be considered.

The legal requirements for a Sector Transformation Charter include that all major stakeholders in any particular sector first need to be clearly demarcated, as there must be a collective decision to develop and define the scope of such a transformation charter. The charter will only be binding on organs of state and public entities once gazetted.

Interim measures to advance transformation should be explored, including focusing on preferential procurement and the development of a skills development scorecard.

Internship programmes proposed in Platform 5 are intended to address transformation, and specifically to bridge the skills gap. Recognition of prior learning will enable equal access to registration with professional associations.

Young previously disadvantaged South Africans do not necessarily recognise the career opportunities in the environmental sector, which acts as a constraint to achieving the transformation targets. The proposals in Building Platform 7 on environmental awareness campaigns and capacity building programmes, as well as those in this platform should assist in changing these perceptions.

Background and Context

Purpose of the Environmental Impact Assessment and Management Strategy for South Africa (EIAMS)

The Environmental Impact Assessment and Management Strategy (EIAMS) for South Africa has been developed in order to address the shortcomings within the current Integrated Environmental Management (IEM) system and processes as identified in the 'Review of Effectiveness and Efficiency of EIA in South Africa' (REE) (DEAT, 2010). A project steering committee (PSC) was established to drive the compilation of the strategy. The PSC included representatives of various sectors, comprising government – including the Department of Environmental Affairs (DEA), the Department of Water Affairs (DWA) and Provincial Competent Authorities and Local Authorities such as Cape Town and eThekwini; Non-Governmental Organisations such as the Wildlife and Environmental Society of South Africa (WESSA), the Federation for a Sustainable Environment (FSE), Groundwork South Africa and the Legal Resource Centre; the Environmental Law Association; Chamber of Mines; Business Unity South Africa (BUSA); Petroleum Agency South Africa; Industrial Development Corporation, Association of Cementitious Material Producers (ACMP); South African Council for the Landscape Architectural Profession (SACLAP); South African Planning Institute (SAPI); South African Property Association (SAPOA);the South African Local Government Association (SALGA); the Academic sector and the South African affiliate of the International Association for Impact Assessment (IAIAsa).

The current environmental management (EM) system provided for in Chapter 5 of the National Environmental Management Act (NEMA), Act 107 of 1998 and subsequent amendments, promotes Environmental Impact Assessment (EIA) as the main compulsory tool to ensure Integrated Environmental Management (IEM) in South Africa, through a regulated environmental authorisation process. In addition to this focus on EIA, Environmental Management Frameworks (EMFs) have been used since 2008 as a strategic environmental instrument to provide a strategic context for project-level decision making and the processes involved in the issuing of environmental authorisations. The Environmental Impact Assessment and Management Strategy (EIAMS) aims to provide a more effective and efficient IEM system that is supported by a range of EM instruments and tools.

The EIA Regulations in terms of the Environment Conservation Act, Act 73 of 1989, came into effect in 1998. Following the promulgation of the revised EIA Regulations of 2006 and 2010, promulgated in terms of the National Environmental Management Act (NEMA), Act 107 of 1998, and several concerns raised about these regulations, it became clear that various role- players perceive the EIA process as not addressing critical sustainable development issues. In response

to these concerns, the DEA commenced on a process to review the efficiency and effectiveness of EIAs (DEAT, 2010) as a tool for environmental management in South Africa (SA).

The recommendations from the REE report were considered in this Strategy (EIAMS).

The following main recommendations come from the REE (2010: p. 182-185):

> ***"Requirements to ensure sustainable development***
>
> *While sustainable development may be achieved in an ad hoc way in a significant number of cases subjected to EIA, the inadequate focus on sustainable development in the EIA process has to be changed. Where the nature of EIA limits its ability to address sustainability issues, it must be complemented by instruments and tools that are more appropriate for this purpose* [in order to attain a comprehensive and effective IEM system]. ...
>
> ***Strategic approach adopted for Environmental Impact Management (EIM)***
>
> *At the moment activities for which EIAs are being undertaken are more or less regarded on the same level. Nuclear power stations, for example, follow the same process as small housing developments irrespective of their relative strategic importance to the country. In order to establish a better perspective of relative strategic importance of projects and environmental aspects, the main recommendations made were to:*
>
> - *categorise activities in terms of their strategic importance;*
> - *categorise environments through the extensive use of the identification of geographical areas under specific and severe pressure of development;*
> - *develop specific appropriate approaches for specific circumstances, to ensure effective and efficient environmental impact management;*
> - *formulate specific policies, targets or thresholds for specified development activities in certain areas that are sensitive to the specified activities; and*
> - *set institutional requirements to ensure that strategic approaches are implemented in the most efficient manner by officials.*
>
> ***Package of instruments***
>
> *The improvement of the effectiveness and efficiency of individual EIAs will largely depend on the ability of government to create the context within which the EIAs are undertaken and evaluated. This obligation goes much further than the competent authorities and should focus on the mainstreaming of environmental objectives and targets in the policies of all government departments.*

The use of Strategic Environmental Assessment (SEA) as an instrument to create the required context should be explored.

It is recommended that a hierarchy of instruments be developed. These instruments should complement and supplement each other in a comprehensive system, and logical and efficient pathways should be created for specific activities or activities in identified sensitive areas.

A better screening mechanism

Further development of the EIM system should put an emphasis on the development of a better screening mechanism that would place a stronger focus on activities with potential significant impacts on the environment and on sensitive environments. Other matrix based screening mechanisms that focus on establishing proper relationships between the nature of activities and the sensitivity of the environment should also be investigated. An early 'check' of sites for sensitive elements by specialists, before any assessments are done should also be considered in at least some circumstances.

A holistic approach

Despite the problems of responsibilities allocated to the different spheres of government in South Africa, there should be a new drive to formulate a holistic approach that caters for EIM from strategic and policy level to project level in a manner that is sensible to the strategic needs of South Africa. This will however require the commitment of government as a whole.

Enhance the role of SEA in the development of SDFs

Spatial Development Frameworks (SDFs), especially LSDFs (local), are the ideal spatial planning instruments into which environmental concerns should be integrated. The SEA processes currently required for SDFs are unfortunately mostly insufficient. With better SEAs or EMFs underpinning SDFs, these spatial planning instruments can play an important role in the avoidance of unnecessary impacts, especially at local level, as they should discourage applications in areas that are not suitable for such applications. This is based on the assumption however that SDFs are implemented and adhered to when decisions are taken on development applications by all authorities.

Compliance monitoring and enforcement

Compliance monitoring and enforcement of EMPs and conditions of authorisation require urgent attention. This is the one area where current EIA is not effective or efficient. It is

recommended that compliance monitoring and enforcement be specifically addressed in the EIM strategy.

Delegation of decision making

One of the key reasons for delays in decision making is that the top management of most of the competent authorities is overloaded with the large number of applications that they have to consider. In many instances, especially where there are EMFs or other guidelines in place, it should be possible to delegate the authorisation of smaller activities to middle management without much risk.

Human resource development

The high turnover in personnel of departments and even in consultancies and the corporate sector is disruptive to the development of capacity of both organisations and individuals, and contributes significantly to both ineffectiveness and inefficiency. A concerted effort that involves all role-players, defined as those who assume or act out a particular role, is required to create a sustainable flow of environmental managers in a way that creates capacity at all levels and also ensures career paths for employees. The EIM strategy will only succeed in addressing issues of efficiency and effectiveness if an actionable plan to build human resource capacity is an integral part thereof."

As indicated, the REE recommended a strategic approach or so-called appropriate EIM strategy. The EIAMS process was therefore initiated in 2010 in response to the REE. The purpose of the EIAMS process was to facilitate participatory compilation of a strategy that gives effect to the objectives of Integrated Environmental Management (IEM) as contained in section 23 of NEMA within the context of the principles of sustainable development (Chapter 1 section 2 of NEMA).

The strategy process considered the desired future state for the IEM system and sought to define the way to achieve it within the mandate provided by Chapter 5 of NEMA – as far as possible – and largely within the context of existing environmental policies.

The desired future was given direction by the workshops that were held at the '10 years of EIA' conference in 2008, and includes an IEM system consisting of voluntary and regulated instruments and tools in the next 5 years, where:

- the inefficiencies and ineffectiveness of the current IEM system have been corrected and the efficiencies and effectiveness optimized;
- regulated EIA is used only when it is the most appropriate tool;

- IEM is given effect through a variety of EM instruments and tools that would, depending on the nature of activities and the receiving environment, supplement (add to), complement (complete) or replace EIA;
- EM takes place within a strategic context of environmentally informed spatial instruments, sector policies and strategies;
- authorities are sufficiently capacitated with skilled and experienced officials;
- other stakeholders are capacitated and empowered to maximise their influence on the effectiveness and efficiency of the system;
- government regulatory processes have been integrated, as far as possible, or at least aligned; and
- all stakeholders are equally committed to make the IEM system work, including government, the private sector, civil society, and the range of professionals from the disciplines and domains of development and the environment.

Vision for the Strategy

The desired future was re-formulated by the PSC into a vision at the commencement of the project, namely:

> *"To give effect to the framework for integrated environmental management by providing for a diverse range of regulatory and other mechanisms to ensure proactive assessment and management that are implemented through cooperative governance and accountable, transparent and participatory decision making, to achieve sustainable development".*

Policy and legislative context

The strategy has not been developed in isolation and responds to various national policies, strategies and initiatives including the Constitution, existing legislation such as NEMA, the National Development Plan (NDP) prepared by the Planning Commission, 12 Presidential Outcomes, the Medium Term Strategic Framework (MTSF) and strategies such as the National Strategy for Sustainable Development (NSSD). The EIAMS strategy responds to the current legislative context while also seeking to influence future policies and legislation.

Constitution of South Africa

The Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996) places people at the centre of environmental management. Section 24 of the Constitution (1996) reads as follows:

> *"**24. Environment**.-Everyone has the right-*
> *(a) to an environment that is not harmful to their health or well-being; and*
> *(b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that-*
> *(i) prevent pollution and ecological degradation;*
> *(ii) promote conservation; and*
> *(iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development."*

NEMA Chapter 1

NEMA principles (Section 2 NEMA) – impact assessment and minimization of impacts

Chapter 1, section 2 of NEMA and Chapter 5 of NEMA seek to give effect to the imperative given by the Constitution through the provision of national environmental principles; requiring an approach that is consistent with the philosophy of Integrated Environmental Management (IEM), and promoting the application of appropriate environmental management instruments and tools to ensure the integrated management of activities that may impact on the environment (Chapter 5).

Section 24 of NEMA provides for the consideration, investigation, assessment and reporting of the potential consequences for, or impacts on, the environment of listed activities (or specified activities) to the competent authority.

The national environmental management principles in section 2 of NEMA apply throughout the Republic to the actions of all organs of state that may significantly affect the environment.

EIAMS in terms of NEMA sections 23 and 24: Integrated Environmental Management (IEM)

The context in which the Strategy is developed and mandated (see Figure 2) stems from NEMA Chapter 5, with specific reference to section 23 that deals with the general objectives of IEM.

The purpose of Chapter 5 is to promote the application of appropriate environmental management tools in order to ensure the Integrated Environmental Management of activities.

NEMA (1998) prescribes the general objectives of Integrated Environmental Management as follows:

> *"**23. General objectives***
> *(1) The purpose of this Chapter is to promote the application of appropriate environmental management tools in order to ensure the integrated environmental management of activities.*
> *(2) The general objective of integrated environmental management is to -*
>
> > *(a) promote the integration of the principles of environmental management set out in section 2 into the making of all decisions which may have a significant effect on the environment;*
> > *(b) identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimising negative impacts, maximising benefits, and promoting compliance with the principles of environmental management set out in section 2;*
> > *(c) ensure that the effects of activities on the environment receive adequate consideration before actions are taken in connection with them;*
> > *(d) ensure adequate and appropriate opportunity for public participation in decisions that may affect the environment;*
> > *(e) ensure the consideration of environmental attributes in management and decisionmaking which may have a significant effect on the environment; and*
> > *(f) identify and employ the modes of environmental management best suited to ensuring that a particular activity is pursued in accordance with the principles of environmental management set out in section 2."*

In NEMA Chapter 5, activities are defined as policies, programmes, processes, plans and projects. Currently section 24 gives effect to the objectives contained in section 23 of NEMA through strategic environmental instruments and tools such as EMF and SEA, environmental authorisations and the setting of norms and standards.

Environmental authorisations include mainly 3 themes:

- Identification of activities which require authorisation;
- Process/procedures for authorisation (including instruments); and
- Implementation of authorisation.

FIGURE 2 CONTEXT AND MANDATE FOR STRATEGY

The following environmental management instruments and tools are referred to by NEMA Chapter 5, section 24(5)(bA):

EIA, Environmental Management Framework (EMF), Strategic Environmental Assessment (SEA), Environmental Management Programme (EMP), Environmental Risk Assessments, Environmental Feasibility assessments, norms and standards, spatial development tools, and other relevant environmental management instruments that may be developed in time e.g. Strategic Forward Planning tools, spatial development tools and spatially informed instruments.

Section 24 enforces compliance with certain processes/procedures for authorisation, and plays a major role in the provision of procedural guarantees to ensure proper environmental governance.

Integrated environmental management (IEM)

As previously indicated the purpose of Chapter 5 is to promote the application of **appropriate environmental management tools** in order to **ensure the integrated environmental management of activities**. IEM as previously defined by the Department of Environmental Affairs and Tourism, (1998) is:

> *A philosophy which prescribes a code of practice for ensuring that environmental considerations are fully integrated into all stages of the development process in order to achieve a desirable balance between conservation and development.*

Although the term IEM has been debated by various authors, the following generic characteristics for IEM are proposed by Nel and Kotze (2009: p. 21).

- *"The scope of what is deemed to be environmental management may range from green to brown to economic, social and ecological issues, including issues related to patterns of consumption and production. This may be attributed to the wide and almost all encompassing definition of 'environment'.*
- *Environmental management should, as the name suggests, fundamentally be a management and public administration science, which is, amongst others, based on other disciplines such as law and economics, as well as natural, human and engineering disciplines.*
- *The scope of environmental management is expanding, fusing with concepts such as sustainability, triple bottom line, corporate governance and corporate social investment.*
- *Environmental management should be executed by both the private and the public sectors.*
- *Management, both at private and public sector levels, should address planning, doing, checking and acting (PDCA) elements.*
- *Environmental management is not concerned with managing the environment; the primary focus should be to manage the behaviour of humans and performance of organisations in line with environmental principles, criteria, standards and legislation.*
- *Activities, products, and services should be managed.*
- *The focus of environmental management primarily should be preventive, supported by corrective or reactive action where required.*
- *Environmental management should manage both the negative and positive impacts of activities, products, services and facilities, requiring trade-offs between positives and negatives including the green, brown, social, ecological and economic dimensions of the environment.*

- *Environmental management should be a series of cyclical processes that consist of a number of steps or phases linked or interfaced with supporting processes. These include the project, product and management cycles.*
- *There are various tools or mechanisms available for environmental management. These tools or mechanisms should, as a minimum, have planning, doing, checking and acting (PDCA)*
- *IEM is not clearly defined in South Africa and may mean different things, depending on by whom it is used and in which context it is used. IEM should be an integrated management strategy which primarily should be aimed at integrating the current fragmented management or governance effort.*
- *Co-operative governance, as it is firmly embedded in the current legal framework also can contribute to establish a more sustainable environmental management or governance effort and also should, as a consequence, address some of the complexities and challenges facing environmental management in South Africa."*

National Development Plan (NDP)

The National Development Plan (2013) has been developed by the National Planning Commission in the Presidency's office. The National Development Plan 2030 Vision is that by 2030, South Africa's transition to an environmentally sustainable, climate-change resilient, low carbon economy and just society will be well underway. The NDP envisaged a phased track over the three successive Medium Term Strategic Framework (MTSF) periods. The first planning, piloting and investing phase (2014 - 2019) focuses on the creation of a framework for implementing the transition to an environmentally sustainable, low-carbon economy.

Medium Term Strategic Framework (MTSF)

In order to realise the NDP vision for Environmental Sustainability and Resilience there are a number of immediate constraints that must be addressed. South Africa faces the challenge of deteriorating environmental quality due to pollution and natural resource degradation, destruction and/or depletion. The NDP acknowledges that the transition to an environmentally sustainable future which is carbon constrained will require the decoupling of economic growth from natural resource degradation and depletion. In terms of the NDP (2011) the following sub-outcomes and actions were identified during the preliminary drafting of the 2014-2019 MTSF:

Sub-outcome 1: Ecosystems are sustained and natural resources are used efficiently.

Sub-outcome 2: An effective climate change mitigation and adaptation response.

Sub-outcome 3: An environmentally sustainable, low-carbon economy resulting from a well-managed just transition.

Sub-outcome 4: Enhanced governance systems and capacity.

Sub-outcome 5: Sustainable human communities.

Indicators, targets and responsible Ministries will be determined as part of the 2014-2019 MTSF.

The current 2009-2014 MTSF's Strategic Priority 9 is stated as "*Sustainable Resource Management and use*" – identified key programmes including the need for "*a common **system for environmental impact management** across government in developing the Environmental Impact Management Strategy that will ensure improved efficiency and effectiveness*" (The Presidency, 2009: p. 38). The EIAMS is therefore a direct response to the MTSF Strategic Priority 9.

12 Presidency outcomes

The Cabinet has approved '12 Outcomes' that collectively address the main strategic priorities of the South African government.

The President has signed performance agreements with each Minister, with delivery agreements which outline the specifics of each outcome. The specifics include detailed and precise descriptions of activities and the context in which implementation must happen in terms of existing legislation, regulations and institutional arrangements; funding; actions needed to achieve the outcomes; indicators, baselines and targets; and implementing partners.

Presidential Outcome 10 (2010: p. 2-3) – stated as "*Environmental Assets and Natural Resources that are well protected and continually enhanced*" – identified four main outputs and measures that should be addressed, namely:

"*Output 1: Enhanced quality and quantity of water resources …*
Output 2: Reduced greenhouse gas emissions, climate change impacts and improved air/atmospheric quality …
Output 3: Sustainable environmental management …
Output 4: Protected biodiversity".

Outcome 10 already provides for specific indicators and targets to measure government performance.

To ensure that environmental assets and natural resources are well protected and continually enhanced, the key partners will focus on the following related sub-outputs:

OUTPUTS	SUB-OUTPUTS
Enhance the quality and quantity of water resources	Water demand (reduction of water loss)-Reduction of water loss from current levels of approximately 30% to 18% by 2014 Water resource protections- preserve groundwater resources and prevent further loss of wetlands. Number of wetlands rehabilitated should increase from 95 to 150 per year Regulation of water quality – 80% of sewage and wastewater treatments plants should be upgraded by 2015 and percentage of wastewater treatment plants meeting water quality standards should increase from 40% to 80% by 2014
Reduced greenhouse gas emissions, climate change and improved air/atmospheric quality	Reduction of Emission of CO_2 by 34% by 2020 Reduction in atmospheric pollutants Renewable Energy deployment Adapting to the impacts of climate change Energy Efficiency
Sustainable Environmental Management	Restoration and Rehabilitation of degraded ecosystems – percentage of land affected by soil degradation to decrease from 70% to 55% Deforestation and forest management – Net deforestation to be maintained at not more than 5% by 2020 and protection of indigenous forest assets by appropriate conservation and relevant agencies Less and better managed waste- percentage of households with basic waste collection and disposal facilities to increase from 50% to 80%, 25% of municipal waste to be diverted from landfill sites for recycling by 2012 Management of environmental impacts from mining and related activities Sustainable land use management – ensure integrated planning, a clear plan that will ensure that environmental issues are integrated into land use planning and incorporated into national, provincial and municipal plans
Protected Biodiversity	Expansion of the conservation estate – land protection and rehabilitation by increasing the percentage of land mass under conservation from 6% to 9% and the hectares of land rehabilitated per year should increase from 624ha to 1000ha by 2014 Percentage of coastline prohibiting harvesting should increase from 9% to 11%, percentage of coastline with partial protection to increase from 12% to 14% Preserve biodiversity and protect ecosystems and species – the number of species under formal protection should increase and the proportion of species threatened should decline from current levels of 6,5 %s: Reduced climate change impacts on biodiversity Protected ecosystems and species Valuing the ecosystem services Protection of agricultural land

TABLE 1 PRESIDENTIAL OUTCOME 10 AND KEY OUTPUTS

National Framework for Sustainable Development (NFSD)

The NFSD (2008: p. 8) spells out South Africa's vision for a sustainable society:

> *"South Africa aspires to be a sustainable, economically prosperous and self-reliant nation state that safeguards its democracy by meeting the fundamental human needs of its people, by managing its limited ecological resources responsibly for current and future generations, and by advancing efficient and effective integrated planning and governance through national, regional and global collaboration."*

This vision is underpinned by a number of principles.

Fundamental principles are related to the fundamental human rights guaranteed in the Constitution, namely: human dignity and social equity, justice and fairness, and democratic governance.

Substantive principles are based on sustainable development principles already enshrined in South African law and underscoring a systems approach to achieving sustainable development, namely: "*efficient and sustainable use of natural resources; socio-economic systems are embedded within, and dependent upon, eco-systems; and basic human needs must be met to ensure resources necessary for long-term survival*" are not destroyed for short term gain (DEAT, 2008: p. 20).

Process principles apply to the implementation of the NFSD (DEAT, 2008: p. 20), namely: "*integration and innovation; consultation and participation; and implementation in a phased manner*".

The NSDF (DEAT, 2008: p.15) provides for:

> *"a systems approach to sustainability because the economic system, socio-political system and ecosystem are seen as embedded within each other, and then integrated via the governance system that holds all the other systems together within a legitimate regulatory framework. Sustainability implies the continuous and mutually compatible integration of these systems over time; sustainable development means making sure that these systems remain mutually compatible as the key development challenges are met via specific actions and interventions to eradicate poverty and severe inequalities".*

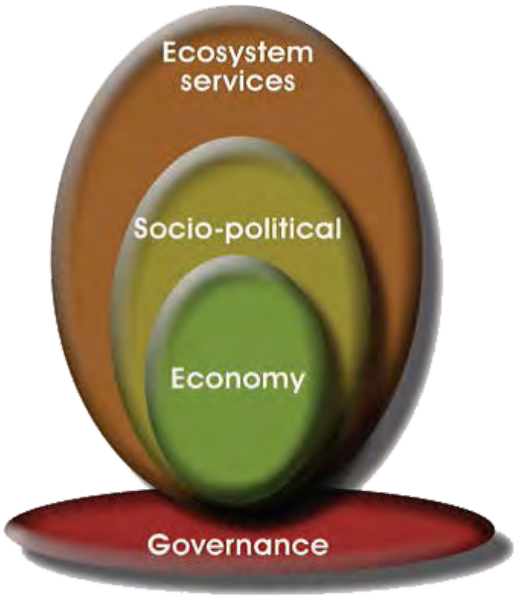


FIGURE 3 SYSTEMS APPROACH TO SUSTAINABILITY (SOURCE: NFSD, 2008: P. 15)

The emphasis is therefore that ecological sustainability should be the key desired outcome of sustainable development.

> "*The NSSD sets out key areas that are in need of attention to ensure that a shift takes place towards a more sustainable development path. In this regard, the following key elements have been identified:*
>
> – *Directing the development path towards sustainability*
> – *Changing behaviour, values and attitudes*
> – *Restructuring the governance system and building capacity."*
>
> (DEA, 2011: p. 9)

The NSSD (DEA, 2011: p. 14), as approved by Cabinet on 23 November 2011, reformulated the NFSD's five strategic priorities and contains an associated Action Plan within the context of sustainable development, namely:

> *"Priority 1: Enhancing systems for integrated planning and implementation …*
> *Priority 2: Sustaining our ecosystems and using natural resources efficiently …*
> *Priority 3: Towards a green economy…*
> *Priority 4: Building sustainable communities*
> *Priority 5: Responding effectively to climate change".*

Relationship between NDP, MTSF, Outcome 10, NSSD and EIAMS

The five main objectives of the NDP, MTSF, Outcome 10 and the NSSD relevant for the strategy can be summarised as:

- an enhanced governance system and sustainable environmental management;
- sustained ecosystems and protected biodiversity;
- effective response to climate change;
- a low carbon or green economy; and
- sustainable communities.

Figure 4 shows the relationships between the NDP, MTSF, Presidential Outcome 10 and the NSSD.

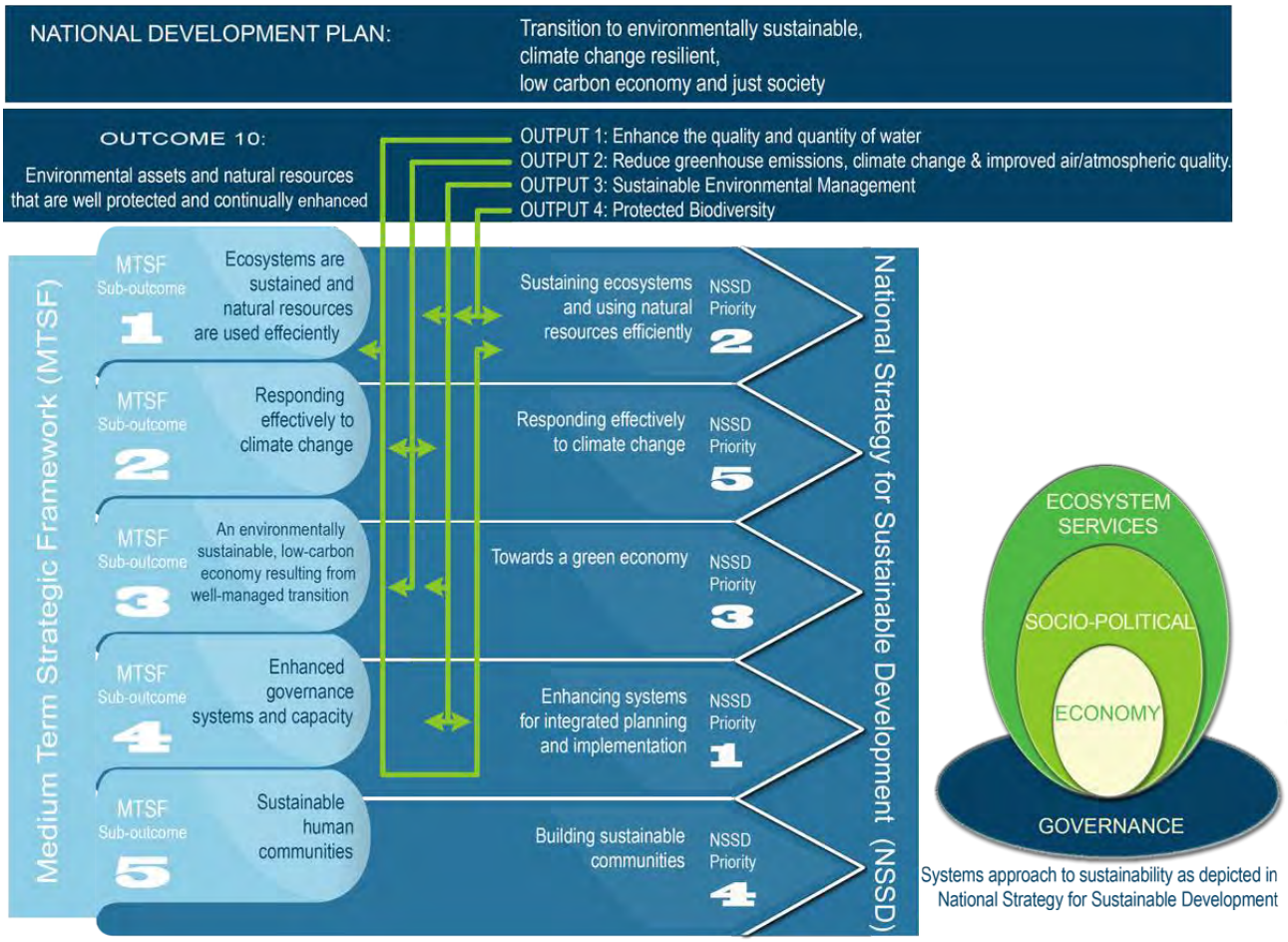


FIGURE 4 RELATIONSHIPS BETWEEN NDP, MTSF, OUTCOME 10 AND NSSD

The EIAMS accepts and promotes the definition of sustainability from the NSSD. The strategy focuses on how to change the current IEM system to support the move towards a sustainability path for the country. The strategy should therefore provide for: an enhanced governance system for integrated planning and implementation (NSSD priority one), an enhanced governance system and capacity (MTSF sub-outcome 4), and sustainable environmental management (Outcome 10 output 3). The National Strategy for Sustainable Development (NSSD) further acknowledges that there are non-negotiable ecological thresholds that need to be maintained and that the social, economic and ecosystem components are embedded within each other. The IEM system to be proposed in the strategy should ensure that environmental thresholds are maintained, ecosystems are sustained and natural resources used effectively (NSSD priority 2 and MTSF sub-outcome 1), and that biodiversity is protected (Outcome 10). The system should further provide for an enabling strategic environmental planning context and environmental authorisation system facilitating and streamlining: effective climate change mitigation and adaptation (MTSF sub-outcome 2 and NSSD priority 5), a movement towards a green and low-carbon economy (MTSF sub-outcome 3 and NSSD priority 3) and the realization of sustainable human communities (NSSD priority 4 and MTSF sub-output 5). There are various other relevant strategies that similarly focus on climate change and the transition to a low-carbon economy, such as the climate change strategy and climate change response plan, and the green economy policy and strategy.

Development of Strategy

The process utilised for the development of the strategy included various sectors and a bottom up process which commenced with the compilation of 11 Subtheme reports by independent EAPs, and thereafter the interrogation and integration of the common trends and recommendations – stemming from the Subtheme reports – in two Theme reports by independent EAPs. The 11 Subtheme reports and 2 Theme reports focused on the following topics:

Theme 1: Governance and Administration, and Impacts and Instruments

Subtheme 1: Procedures and Organisational Structures

Subtheme 4: Monitoring and Enforcement

Subtheme 9: Existing and new Environmental Impact Management Tools

Subtheme 10: Co-operative Governance: EIAM tools

Subtheme 11: Quality Management: EIAM Tools

Theme 2: Capacity, Skills, Knowledge, Transformation and Public Participation

Subtheme 2: Knowledge and Information

Subtheme 3: Public Participation

Subtheme 5: Quality Assurance and Independence of EAPs

Subtheme 6: Representative Demographics within Service Providers and Civil Society

Subtheme 7: Empowerment of Marginalised Communities

Subtheme 8: Skills of EAPS and Government Officials

The PSC had to work towards majority consensus on the Subtheme and Theme reports in order to compile a national Strategy representing the environmental sector's viewpoint. The PSC Strategy will be presented to the Department of Environmental Affairs for consideration.

The process over 4 years has been intense yet productive, sometimes characterised by conflicts and disputes between different sectors, but also by learning from each other's knowledge and about each other's perspectives. Full agreement was not reached on the Subtheme reports and therefore two Theme reports were commissioned to interrogate the recommendations – both those agreed and those contested – and trends. A Dispute Resolution Committee was implemented to address disagreement. Finally, in order to address concerns within the PSC on the recommendations of the two Theme reports, a set of underlying principles has been compiled for the Strategy. All recommendations in the Strategy should therefore be read within the framework of these principles as discussed previously.

The PSC used the two Theme reports to develop nine building platforms and a number of associated pillars. These platforms and pillars provide the foundation for the Strategy in seeking to address the problems inherent in the current IEM system. The following nine root causes were identified as underlying the limited success of the current IEM system in achieving sustainability (where a 'lack' means to not have enough of something):

1. Lack of internalisation of NEMA principles and the principles of sustainability.
2. Lack of effective cooperative governance.
3. Lack of mechanisms for monitoring, evaluation, feedback and adaptive management, and conflict resolution.
4. Lack of a systematic approach to the use of environmental management instruments and tools.
5. Lack of confidence in environmental professionals.
6. Lack of effective knowledge management and skills to utilise the knowledge management systems.

7. Lack of understanding of, and appreciation for, the environment and environmental management instruments and tools.
8. Lack of effective public participation and appreciation for public participation as a process that adds value to Integrated Environmental Management.
9. Lack of transformation of the environmental sector.

Main building platforms for the Strategy addressing the identified root causes

The following nine building platforms or main objectives, expressed as desired outcomes, were identified to address the root causes of these problems. These form the main building platforms of the EIAMS:

1. All Integrated Environmental Management (IEM) systems and processes are directed towards achieving sustainability.
2. There is effective alignment – and in some instances full integration – between and within all spheres of government and organs of state in giving effect to IEM.
3. Monitoring and evaluation of socio-economic, ecological and IEM systems and processes lead to adaptive management.
4. Environmental management instruments and tools are effective in achieving the objectives of IEM.
5. Environmental practitioners and specialists are professional, ethical, objective and independent.
6. Environmental information and information management systems are credible, up-to-date, accurate and accessible to all role-players in IEM systems and processes.
7. All role-players are environmentally aware and are capacitated to engage meaningfully in IEM systems and processes.
8. The purpose of public participation is understood and the process is used by all role-players in IEM systems and processes to inform environmental governance.
9. A transformed environmental sector exists.

Summarised building platforms and pillars

The building platforms are supported by pillars leading to relevant appropriate actions. A summary of the pillars is provided in Table 2.

Building Platform 1	All Integrated Environmental Management (IEM) systems and processes are directed towards achieving sustainability.
Pillars	Pillar 1: All legislation and policies, and the implementation thereof, which affect the environment, give effect to the principles of sustainability in NEMA as well as sustainability objectives, indicators and targets. Pillar 2: A sustainability-led approach is adopted to maximise positive effects of human activity in meeting all of the interdependent sustainability requirements for biophysical system integrity and basic human health, well-being and livelihoods, avoiding inappropriate trade-offs; a sustainability-led approach includes the use of sustainability objectives, indicators and targets, as well as avoidance and minimisation of impacts. Pillar 3: An impact mitigation hierarchy approach is followed to avoid inappropriate trade-offs that result in the loss of important ecosystem services and functions, and cause significant societal impacts.
Building Platform 2	There is effective alignment – and in some instances full integration – between and within all spheres of government and organs of state in giving effect to IEM.
Pillars	Pillar 1: Environmental considerations and priorities are integrated into the policies, decision making and operations of all relevant government departments. Pillar 2: Legislation and policies governing Integrated Environmental Management are coherent, consistent and avoid duplication. Pillar 3: An enabling institutional framework (including legislation, policy and institutional forums) facilitates cooperation and improves alignment and integration across different sectors and between provincial, national and local spheres of government, promoting an integrated approach to sustainability; there is alignment of strategic plans and frameworks, decisions and implementation, and environmental management is integrated into local decision making. Pillar 4: Strategic spatial development plans and frameworks such as SDFs are informed by environmental planning tools whose intent, content, timing and scale facilitate integration with SDFs.

Building Platform 3	Monitoring and evaluation of socio-economic, ecological and IEM systems and processes lead to adaptive management.
Pillars	Pillar 1: Monitoring and evaluation of the IEM systems and processes leads to adaptive management, which achieves best practice and continual improvement. Pillar 2: The check (monitoring) and act (enforcement) phases of IEM systems and processes are effective. Pillar 3: Regular evaluation of sectoral policies and strategic plans, policies and programs (impacting on the environment) takes place to measure and achieve alignment with NEMA principles and sustainability objectives, indicators and targets. Pillar 4: Conflict is avoided by applying best practice in all IEM systems and processes as well as incorporating the NEMA principles into all sector policies and plans (e.g. through mandatory SEA); the extensive provisions in Chapter 4 of NEMA regarding 'Fair Decision-making and Conflict Management' are upheld and effectively implemented. Pillar 5: Cooperation and co-regulation is encouraged, to avoid negative environmental impacts and promote sustainability. Pillar 6: All stakeholders are aware of their rights (e.g. whistle blowing) to ensure the monitoring and enforcement of environmental laws and regulations; such awareness is built through large scale capacity building. Pillar 7: Local authorities assist in the enforcement of development conditions of approval.
Building Platform 4	Environmental management instruments and tools are effective in achieving the objectives of IEM.
Pillars	Pillar 1: A progression of environmental management instruments and tools exists, with robust and effective information transfer between the different instruments and tools. Pillar 2: Strategic environmental planning is effected as a priority in the national, provincial and local spheres of government, and for the whole country; instruments such as Environmental Outlook reporting, SOER, SEA and EMF or other strategic spatial tools are utilised, and strategic planning is sustainability-led with clearly defined sustainability objectives, indicators and targets. Pillar 3: All existing EM instruments and tools are correctly and appropriately applied in particular contexts, and are supplemented by new instruments and tools where gaps become evident. Pillar 4: Reporting within EM instruments and tools on potential positive and negative impacts of proposed policies, plans, programmes and/or projects – and their potential sustainability performance (measured against the pre-determined sustainability indicators and targets as well as avoidance and

	minimisation of impacts) – is consistent and effectively informs decision making. Pillar 5: Legislation, including a list of activities, is the primary mechanism to identify and formalise the adoption of instruments and tools; the list of activities is based on the sensitivity of the receiving environment, limits set for environmental aspects, and the type and scale of activity; the use of EM instruments and tools for non-listed activities is guided by the progression (future framework) for EM instruments and tools and the development planning cycle. Pillar 6: Strategic environmental instruments and tools adopted by the Competent Authority identify geographical areas where (a) certain activities may be excluded from the EIA requirement or (b) where EIAs can be downscaled to other EM tools such as specialist assessments, standards, and EMPrs. Pillar 7: Spatial environmental instruments and tools adopted by the Competent Authority identify geographical areas where specific listed activities are prohibited or the granting of environmental authorisation is restricted, in order to (amongst others) prevent loss of important ecosystem functions in terms of the pre-determined sustainability objectives, indicators and targets. Pillar 8: For a selected list of activities the relevant competent authority has the ability and discretion to identify and choose fit for purpose EM tools and instruments based on pre-determined objective criteria and in line with approved/ adopted strategic environmental instruments and tools. Pillar 9: All government departments provide practical information on the State of the Environment and produce Environmental Outlook Reports, making provision for this activity within their Environmental Implementation Plans (EIPs) and Environmental Management Plans (EMPs); the framework for such information provision is provided by DEA and rests on the intents of the NSSD, NDP, Presidential Outcome 10, MTSF and the pre-determined sustainability objectives, indicators and targets.
Building Platform 5	Environmental practitioners and specialists are professional, ethical, objective and independent.
Pillars	Pillar 1: A statutory Council for Environmental Professionals is constituted, with sub-bodies – professional associations – representing the various disciplines (e.g. EAPASA); all environmental professionals are registered by the Council and belong to the appropriate association(s). Pillar 2: A classification and categorisation system for environmental professionals has been developed; all professional functions within IEM processes are implemented by appropriately qualified and competent registered practitioners and specialists. Pillar 3: Regulatory instruments such as codes of conduct, disciplinary procedures and codes of ethics are ensured by the statutory council and professional associations. Pillar 4: Continuing Professional Development (CPD) forms part of the requirements for continued registration with the statutory council and the relevant professional association(s). Pillar 5: The various professional associations liaise with institutions of higher learning to align curricula, as well as accredited training courses, to IEM systems and processes, and to accredit

	programmes to the exit level outcomes of registered national qualifications. Pillar 6: The various professional associations have internship systems for students in training and candidate practitioners, which enables them to gain practical experience and skills that assist them to find work and enhance their ability to register as environmental professionals. Pillar 7: Environmental professionals and government officials in all spheres of government tasked with environmental management receive relevant training; such training allows for some level of delegation/mandating of decision making authority where appropriate. Pillar 8: A robust mechanism for peer review has been developed and implemented in support of professionalism, objectivity and independence. Pillar 9: A professional association for Public Participation Practitioners is established under the Council for Environmental Professionals.
Building Platform 6	Environmental information and information management systems are credible, up-to-date, accurate and accessible to all role-players in IEM systems and processes.
Pillars	Pillar 1: A catalogue of available information is centrally maintained, indicating where information is available and its fitness for use. Pillar 2: A system to track the planning and authorisation of all proposals subject to EM instruments, tools and processes is implemented, and is available to all role-players. Pillar 3: Standards for data and information are developed, implemented and reviewed, serving to make more meaningful information available to role-players. Pillar 4: Data and information are up-to-date, verifiable, of adequate quality and publicly available; appropriate mechanisms are implemented for accessing information. Pillar 5: A system is implemented for documenting and disseminating tested local knowledge that is accessed during the application of EM instruments and tools. Pillar 6: Information on activities that impact adversely on the environment is publically accessible.

Building Platform 7	All role-players are environmentally aware and are capacitated to engage meaningfully in the IEM systems and processes.
Pillars	Pillar 1: Environmental awareness programmes address and effectively communicate information about key environmental issues, how these issues are impacted by development, and the concept of sustainable development. Pillar 2: A clear and consistent understanding of the meaning of the NEMA principles is enabled among all role-players. Pillar 3: Marginalised communities are provided adequate access to IEM systems and processes. Pillar 4: The capacity needs of all role-players in IEM systems and processes are identified, and programmes are developed and implemented in ways appropriate to these needs. Pillar 5: Capacity building traverses all the building platforms identified by this Environmental Impact Assessment and Management Strategy.
Building Platform 8	The purpose of public participation is understood and the process is used by all role-players in IEM systems and processes to inform environmental governance.
Pillars	Pillar 1: The public participation process identifies key stakeholders and promotes meaningful participation to meet the purpose of public participation. Pillar 2: The IEM systems and processes guide the extent of public participation as appropriate to the IEM instrument or tool being used. Pillar 3: Guidelines exist for public participation within the IEM framework. Pillar 4: The outcomes of public participation are integrated into and inform all phases of IEM. Pillar 5: In selected IEM applications, public participation and/or social science practitioners are included in the team managing public participation processes.
Building Platform 9	A transformed environmental sector exists.
Pillars	Pillar 1: The sector complies with codes of best practice to promote black economic empowerment and supports transformation of the sector. Pillar 2: Imperatives exist to transform the EAPS and NGOs.

TABLE 2 EIAMS BUILDING PLATFORMS AND PILLARS

1. Building Platform 1

All Integrated Environmental Management (IEM) systems and processes are directed towards achieving sustainability.

Building Platform 1 addresses Root Cause 1: Lack of internalisation of NEMA principles and the principles of sustainability.

The Environmental Right as contained in the Constitution (RSA, 1996: section 24(b)) requires, amongst other things, that the environment is protected *"through reasonable legislative and other measures that- … secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development*". The National Development Plan is clear that by 2030, South Africa's transition to an environmentally sustainable, climate-change resilient, low carbon economy and just society should be well underway. The National Framework for Sustainable Development promotes ecological sustainability as the key desired outcome of sustainable development, while the Strategy for Sustainable Development confirms that the national development path should be directed towards sustainability.

When considering the trends of all sustainable development parameters, South Africa's success in converting the strategic policy context (e.g. NSSD, NDP and others) into effective development planning for the achievement of a sustainable future (or increasingly achieving sustainable outcomes) is questionable. After more than 15 years of Integrated Development Planning (and its associated Spatial Development Frameworks), there are still some Municipal Spatial Development Frameworks that are not based on credible environmental management information or that adequately respond to sustainability challenges, especially in smaller municipalities. This problem exacerbates the challenge of project level assessment of impacts, in that such assessment is not being informed by an appropriate strategic context (i.e. an EMF or an SDF that was informed, in turn, by strategic environmental planning information).

Although NEMA makes provision for various environmental management instruments and tools, the current IEM system is dependent on EIA as the primary EM tool for project level implementation. Many of these instruments and tools are provided for in a well-defined policy and legislative framework that contains the necessary elements for effective implementation in order to achieve sustainable outcomes. However, complicating factors weaken the ability of these instruments and tools to achieve sustainable outcomes, such as institutional and legislative fragmentation resulting in duplication, conflicts and inefficiency, the weak formulation of strategic contexts to inform project level planning and assessments, as well as poor EIA practice that focuses largely on mitigation of impacts.

In future, all EM systems, processes and (implementation) practices related to strategic planning and project planning, assessment and reporting, should therefore be directed towards achieving sustainable outcomes, as indicated in the pillars for Platform 1.

Pillars for Building Platform 1

Pillar 1: All legislation and policies, and the implementation thereof, which affect the environment, give effect to the principles of sustainability in NEMA as well as sustainability objectives, indicators and targets.

Pillar 2: A sustainability-led approach is adopted to maximise positive effects of human activity in meeting all of the interdependent sustainability requirements for biophysical system integrity and basic human health, well-being and livelihoods, avoiding inappropriate trade-offs; a sustainability-led approach includes the use of sustainability objectives, indicators and targets, as well as avoidance and minimisation of impacts.

Pillar 3: An impact mitigation hierarchy approach is followed to avoid inappropriate trade-offs that result in the loss of important ecosystem services and functions, and cause significant societal impacts.

Pillar 1

All legislation and policies, and the implementation thereof, which affect the environment, give effect to the principles of sustainability in NEMA as well as sustainability objectives, indicators and targets.

The context for sustainability in South Africa is provided by section 24 of the Constitution which refers to ecologically sustainable development having to be secured while promoting justifiable economic and social development.

The NEMA, as the framework legislation for environmental management in South Africa, builds on the Constitution to create an expanded context for sustainability and sustainable development. Chapter 1 section 2 of NEMA lays down national environmental management principles that apply throughout the Republic to the actions of all organs of state that may significantly affect the environment. These principles, together with sustainability indicators provided for in Presidential Outcome 10, or any sustainability objectives contained in environmental strategies such as Environmental Implementation Plans, are the agreed outcomes that need to be aspired to by government. All legislation and policies in other sectors and spheres of government affecting the environment should therefore give effect to the principles of sustainability and determined sustainability targets.

Understanding of the principles of sustainability

Although NEMA sets out the sustainability principles, they are strategic in nature and as such, open to interpretation, discretion and different understanding. However, the interpretations given to the NEMA principles must be consistent with the context provided for in section 24 of the Constitution. Further practical guidance can be found in the strategic policy contexts as contained in amongst others the NSSD, the National Development Plan and Outcome 10. Innovative approaches need to be established in order to ensure that effect is given to the principles during all phases of IEM procedures. A clear and consistent understanding of the meaning of the NEMA principles should be enabled by the compilation of a NEMA guideline document focussing on the NEMA principles and the revision of existing guidelines in the light of the NEMA principles.

Sustainability objectives, indicators and associated targets

Although an improved understanding of sustainability and NEMA principles is essential, they are not context specific and cannot be measured. There is a need for clear sustainability objectives, indicators and targets. The Presidential Outcome 10 has made progress in this regard, setting clear national environmental priorities, covering water resource protection, wetlands protection, wastewater treatment, reduction of air pollution and CO_2 emissions, renewable energy and energy efficiency, preservation of biodiversity, ecosystems and ecosystem services protection, soil protection, management of forest assets, coastline protection, agricultural land protection, waste collection and disposal, management of impacts from mining, sustainable land use management and sustainable communities. Every objective should be supported by indicators and targets against which the success of the IEM system in achieving sustainability can be measured (also see Pillar 2 for an expanded discussion on the setting of objectives, indicators and targets). These national objectives must, however, also be cascaded down into identifiable objectives, indicators and targets to provide guidance at a local level.

The role of strategic environmental planning in setting a strategic context for sustainability

Environmental planning relates to the creation of a strategic environmental context for decision making and performance monitoring which ensures that communities can achieve sustainable development through the wise use of resources (inclusive of land) in a way that is good for ecosystems and society. Environmental planning plays an important role in bridging the gap between strategic national objectives and setting and implementing local objectives to achieve sustainable development outcomes on the ground.

The role of strategic environmental planning in municipal authorities must also be emphasised. Firstly, it is linked to – and must reflect the direction provided by – strategies of national and provincial governments. Strategic direction can be provided by provincial Environmental Implementation Plans (EIPs) and provincial Spatial Development Frameworks (SDFs), as well as strategic level reporting emanating from State of the Environment Reporting, which identifies

trends to be addressed in the revision of strategic and spatial plans (i.e. planning for desired change). Secondly, strategic environmental planning is linked to project level assessment and reporting by providing the strategic context against which such assessment and reporting is to be measured. As such, environmental planning is ideally suited for the introduction of sustainability-led thinking by assisting with the planning for a 'desired state' and determining sustainability objectives, indicators and targets. Currently, Strategic Environmental Assessment (SEA) and Environmental Management Frameworks (EMFs) are the two key instruments used in strategic environmental planning.

The need for guidance in setting objectives, indicators and targets

As already highlighted, the NEMA principles are strategic in nature and open to interpretation. A guideline is needed on the interpretation of the NEMA principles that can be used in the compilation of strategic policies, plans and programmes, as well as in project level plans both at the assessment and compliance reporting stages.

Guidance is also needed to assist in the formulation of objectives, indicators and targets at all levels of strategic planning to ensure that they are meaningful in facilitating the achievement of sustainability (or sustainable development outcomes). Objective criteria for sustainability based on best science are to be developed with public participation to determine appropriate and enforceable sustainability criteria.

Guidance is also needed to evaluate the performance of both strategic and project level planning in giving effect to sustainability outcomes in the absence of identified objectives, indicators and targets, or until such time as these have been identified. However, such generic guidance does not take away the importance of developing sustainability objectives, indicators and supporting targets for different sectors and/or geographical areas (even in the municipal sphere). Until such time as such objectives and targets are being developed, a generic guideline (and evaluation tool) would be a valuable tool to facilitate decision making towards achieving sustainability outcomes. The guideline will also ensure that practitioners and decision makers engage with sustainability issues in the compilation of project application documentation or during decision making.

In the case of municipalities, it must be emphasised that whilst a general guideline on the NEMA principles will be valuable, specific guidance is needed to ensure that IDPs and SDFs give effect to the relevant provincial Environmental Implementation Plans and the NEMA principles – in general and in terms of strategy formulation and performance management in particular.

The evaluation of all sectoral legislation, policies and the implementation thereof for consistency with the policy context for sustainability

Once these guideline documents and sustainability objectives, indicators and targets have been put in place, it will be much more apparent where legislation, policies and its implementation are in

conflict with a sustainability focus. Ssectoral legislation, policies and the implementation thereof by organs of state should be investigated to identify areas of conflict that may exist at a policy level and in implementation strategies and practices. To assist with the evaluation of legislation, policies and implementation strategies, the development of a robust evaluation tool is required. Such a tool can both guide the development of such documents and evaluation of their performance.

The improved guidance on the NEMA principles and the identification of sustainability objectives, indicators and targets *per se* does not result in improved sustainability performance. Their success will be dependent on the understanding and adoption thereof by all role-players. These role-players, including the general public, practitioners in the environmental sector, government officials, developers and contractors, must be capacitated on the need for and implementation of the NEMA principles, sustainability objectives, indicators and targets.

Actions identified

- Formulate a guideline document on the interpretation of the NEMA principles, as well revise and improve existing guidelines which relate to the NEMA principles.
- Develop generic sustainability criteria for decision making based on the environmental right enshrined in the Constitution and the NEMA principles; such generic criteria should provide a robust, evaluation framework that can be used consistently in the evaluation of legislation, policies and implementation strategies in terms of their consistency with sustainability principles; a separate sustainability evaluation framework should be developed for project level planning, assessment and decision making.
- Develop and implement various innovative approaches to integrating the NEMA principles at the various stages of IEM procedures, for different sectors and different levels of implementation.
- Determine the desired state of the environment in all spheres of government and in strategic planning frameworks; the desired state should be translated into objectives, indicators and targets.
- Identify policies and legislation where the interpretation and implementation thereof by practitioners and officials is in conflict with sustainability principles and which may contribute to environmentally damaging practices and uses that are not ecologically sustainable; identify legislation and policies (including self-regulatory tools) that have been successful in aligning with the NEMA principles and good environmental practices, and promote them as best practice examples.
- Conduct awareness raising and capacity building programmes for all role-players on sustainability, inclusive of the NEMA principles, as well as the formulation and implementation of sustainability objectives, indicators and targets (see also Building Platform 7.)

Pillar 2

A sustainability-led approach is adopted to maximise positive effects of human activity in meeting all of the interdependent sustainability requirements for biophysical system integrity and basic human health, well-being and livelihoods, avoiding inappropriate trade-offs; a sustainability-led approach includes the use of sustainability objectives, indicators and targets, as well as avoidance and minimisation of impacts.

Integrated Environmental Management (IEM) requires that environmental concerns should be considered as early as possible in the planning and decision making processes, with the ultimate aim to avoid environmental impacts and where they cannot be avoided, to mitigate and minimise impacts. It should however be taken even further by determining how and if an activity could contribute positively to determined sustainability objectives, indicators and targets. The emphasis should therefore not only be on the minimisation of the potential negative impacts of proposed policies, plans and programs (PPPs), projects/ activities and the enhancement of positive benefits, but also on how a specific PPP, project or activity will contribute to the achievement of the contextually defined sustainability objectives, indicators and targets. EIA practice, within the context of IEM, should fundamentally question the sustainability of a development proposal, moving beyond the mere mitigation of impacts. The assessment of ecosystem functions and services should specifically link to people's health, wellbeing and livelihoods.

A sustainability-led approach for the IEM system in South Africa is consistent with the goal of achieving a sustainable development path for the country as defined in amongst others, the NDP, NSSD and the Presidential Outcomes. The adoption of a sustainability-led approach in Environmental Impact Assessment and Management will also promote the identification of sustainability objectives, indicators and targets in EMFs and SEAs by national, provincial and local authorities, and are intended to inform relevant provincial and local development planning frameworks and strategies, e.g. Integrated Development Plans (IDPs) and Spatial Development Frameworks (SDFs). Requirements for and reporting mechanisms on how EMFs or SEAs have been incorporated into IDPs and SDFs will need to be provided for in NEMA. The adoption of a sustainability-led approach in all spheres of government should aim to cascade national sustainability objectives, indicators and targets downwards, for refinement and meaningful implementation at a local scale. Similarly local sustainability know-how can be disseminated to the wider spheres in a process of mutual adjustment.

Despite the fact that the principle of a sustainability-led approach is generally supported, it is acknowledged that the implementation thereof faces several challenges, including:

- Whilst the implementation of a sustainability-led approach has been implemented elsewhere in the world, it is relatively new in South Africa. As such it is anticipated that

differences of opinion will exist and there will be a lack of a common understanding of the purpose and implications thereof, and how it will be implemented. This challenge is evident from the level of debate that accompanied its inclusion in this Strategy.

- It will be a challenge to reach consensus between diverse stakeholders on setting objectives, indicators and targets, especially at the local level.
- The implementation of a sustainability-led approach is information intensive, requiring adequate information to inform a rational development of objectives, indicators and targets at a level (scale) that makes sense within the community and local environment where it is to be implemented. In many instances, this level of information does not exist or is not readily available.

Although the identification and implementation of sustainability objectives (outcomes) will be a challenge, the promotion of a sustainability-led approach must not be seen as a new system to replace the current impact mitigation hierarchy approach, but that the relationship between the two approaches is one of complementarity. In other words, a sustainability-led approach does not replace the need to follow the steps of the impact mitigation hierarchy approach.

As such, a phased approach will have to be adopted to implement sustainability objectives, indicators and their associated targets. Whilst the setting of national objectives, indicators and targets may be achievable (based on the strategic context as prescribed by the NEMA principles, Outcome 10, Desired State of the Environment and other national policy informants), the cascading thereof down to provincial, regional and local spheres will be much more challenging. Ultimately the local plans and strategies, for example, Integrated Development Plans (IDPs) and Spatial Development Frameworks (SDF), represent the desired level at which objectives, indicators and targets should be developed. It must also be noted that NEMA principles, Outcome 10, Desired State of the Environment do not constitute the only information source for the identification of sustainability objectives. In different spheres (e.g. local government), additional objectives may be identified through public consultation and the inclusion of sector specific objectives, indicators and targets.

Initially, as a first phase, sustainability objectives are to be defined at a project level on a case-by-case basis (i.e. defining the desired objectives to be achieved by a development proposal). The development of a guideline on sustainability criteria (or questions) could greatly assist with the identification of project level sustainability objectives. The consistent application of this approach would be new, and therefore will require additional capacity building at the onset.

In addition, a phased approach will also have to be adopted by initially only setting objectives and then progressing towards setting indicators and targets as more information becomes available. In order to facilitate such a phased approach (the progression from sustainability objectives to

indicators and targets), assessments and reporting against sustainability objectives should initially be a minimum requirement in all EIAs, SEAs and EMFs. More specific indicators and targets will only be required where the information is readily available. As time progresses and more information becomes available as country-wide strategic environmental planning materialises, it should be required that all environmental assessments include sustainability indicators and targets.

One of the primary benefits of adopting a sustainability-led approach in EIA is that it fundamentally questions the purpose, need and desirability of projects, beyond the current approach of impact mitigation. A shift to sustainability-led criteria represents an evolution from avoidance of significant adverse effects towards enhancing expected positive contributions to sustainability objectives, however vaguely specified. This approach will support the notion that alternatives to proposals and projects need to be evaluated in order to meet intended needs, purposes and sustainability objectives and targets. The alternative that will best give effect to sustainability targets and have the lowest environmental impact should be the most appropriate option.

It must be emphasised that the implementation of a sustainability-led approach does not exclude the identification, avoidance, minimisation and remediation of the negative impacts of development on the environment.

Guidance will be required to facilitate the implementation of a sustainability-led approach at a strategic planning level, as well as at project planning level. This will have to include the development of guidelines, awareness raising and capacity building programmes.

In the development of a guideline on the implementation of a sustainability-led approach, it is recommended that the following be considered as key requirements for when a sustainability–led approach (and the identification of objectives, indicators and targets) is appropriate:

- Baselines can be measured.
- Indicators can be set based on best scientific practice.
- Monitoring, measuring and implementing compliance enforcement to sustainability targets can be achieved both effectively and cost effectively.
- The setting of objectives and choosing of indicators is informed by local considerations, and interests.
- Human health and wellbeing should be considered in the determining of the criteria and indicators for a sustainability approach.
- With regard to pollution control, objectives, indicators and targets must be able to be interpreted into setting emission limits at source which aim to minimise impacts and emissions. Sustainability criteria must coexist with the duty to minimize in terms of the NEMA principles.

Actions identified

- Unpack further the principles of a sustainability-led approach, including the implementation and phasing thereof based on the availability of baseline information, pre-determined sustainability objectives, indicators and targets, limits of acceptable change, and the institutional capacity of decision makers and environmental professionals to implement such a system.
- Identify sustainability objectives, indicators and targets within an appropriate environmental planning context, using strategic environmental management instruments and tools; in all spheres of government, the process should commence with the verification of baseline information (state of the environment), followed by determination of the desired state of the environment, and culminating in the identification of sustainability objective, indicators and targets; a determined effort should be made to phase in the sustainability-led approach.
- Conduct awareness-raising and capacity building for all role-players on a sustainability-led approach, as recommended in Platforms 5 and 7.
- Formulate a guideline to facilitate the implementation of a sustainability-led approach, including the setting of objectives, indicators and targets as part of strategic planning documents.

Pillar 3

An impact mitigation hierarchy approach is followed to avoid inappropriate trade-offs that result in the loss of important ecosystem services and functions, and cause significant societal impacts.

Although trade-offs are a reality in development planning and impact management, inappropriate trade-offs that are inconsistent with the Constitutional environmental right and the NEMA principles must be avoided. This must be achieved through the implementation of the impact mitigation hierarchy in development planning and impact management.

The impact mitigation hierarchy dictates that impacts should firstly be avoided, but if unavoidable, appropriate measures should be taken to minimise and rectify (or remedy) such impacts, in a manner that will achieve sustainability objectives and targets, and enhance positive impacts. If the impacts cannot be avoided, minimised or rectified, consideration can be given to the implementation of offsets, depending of the significance of such impacts. The role of considering alternatives to avoid or reduce impacts is fundamental in the application of the impact mitigation hierarchy.

Based on the above it is clear that social and ecological offsets are to be avoided as far as possible and should only be considered if all other options to avoid, minimise and remedy impacts have been explored. In other words, offsets are only to be used in exceptional circumstances to compensate for the residual, unavoidable societal impacts, harm to ecosystem functions or biodiversity loss caused by development projects. As such, it is not appropriate for any role-player to contemplate the use of offsets prior to debating the avoidance of impacts and the mitigation of unavoidable impacts.

In the case of biodiversity offsets, DEA&DP (2007: p. 5) states that the trigger for biodiversity offsets is the significance of residual negative impacts on biodiversity, as follows:

- *"When residual impacts on biodiversity are of 'very high' significance, offsets are inappropriate as they could not compensate for the loss of biodiversity.*
- *When residual impacts on biodiversity are of 'medium' to 'high' significance, potential offsets for biodiversity loss should be explored.*
- *When residual impacts on biodiversity are of 'low' significance, there is no need for biodiversity offsets.*
- *The cost of designing and implementing offsets should be borne by the developer".*

The use of trade-offs must be considered within the context of the environmental right contained in the Constitution and the NEMA principles. The environmental right in the Constitution also acknowledges that the relationship between different forms of capital (i.e. social, human, man-

made, natural capital) is not one of “substitutability”, but a relationship of “interdependency” and “complementarity”, especially dependence of other forms of capital on maintaining natural capital.

Trade-offs often involve the transformation of natural capital into social and man-made capital. This takes place regularly in impact assessment and development planning processes. However, the consideration of trade-offs without following an impact mitigation hierarchy approach in the assessment of impacts is inappropriate. In addition, the need for trade-offs must be evaluated against the achievement of sustainability objectives, indicators and targets, which already exist in terms of systematic conservation planning outcomes in some regions.

Of paramount importance when considering a trade-off, is that:

- the trade-off must be stated explicitly; and
- reasoned motivations should be provided on the application of trade-off rules that informed choices made during the planning, EIA and decision making processes.

Trade-off rules are related to the use of explicit decision criteria to achieve sustainable development outcomes. Critically, trade-offs do not refer solely to the loss of important ecosystem function, but to many other core sustainability issues across all components of the environment, including sustaining livelihoods and improving intra-generational equity, as well as intergenerational equity. Clear guidance, capacity building and awareness raising are needed on the application of, and rules for, trade-offs in decision making. Whilst the need for trade-offs is accepted, inappropriate trade-offs should be exposed and eliminated.

Actions identified

- Formulate a guideline to assist all role-players with the interpretation and implementation of the impact mitigation hierarchy.
- Develop a national guideline on the role and implementation of ecological and social offsets in strategic and project planning in the context of the impact mitigation hierarchy.
- Produce an up-to-date national guideline on the use of biodiversity offsets; the guide should include the conditions under which biodiversity offsets should be used, principles for the use of biodiversity offsets, offsets within EIA and SEA or other strategic planning processes, the offset design and management process, and evaluation criteria to measure the success and appropriateness of offsets.
- Conduct awareness raising and capacity building programmes for all role-players on the role of, and process for, developing and monitoring the implementation of offsets, as recommended under building Platforms 5 and 7.
- Provide clear guidance on the application of trade-off rules, as well as capacity building and awareness raising programmes on the application of trade-offs and trade-off rules.

2. Building Platform 2

There is effective alignment – and in some instances full integration – between and within all spheres of government and organs of state in giving effect to IEM.

Building Platform 2 addresses Root Cause 2: Lack of effective cooperative governance.

In order to clearly describe the intentions of this platform, definitions of the terms integration, alignment, coordination and cooperation are provided below. Integration, comes from the Latin word for 'made whole', and means to combine two things so they form a whole. Alignment means the proper positioning of parts in relation to each other. Coordination has a similar meaning to alignment, as the organization of different elements of a complex body or activity to enable them to work together effectively. In the context of this Strategy, both alignment and coordination are about the organization needed (in terms of policies, laws, institutional arrangements and procedures) to bring about cooperative governance, where cooperation means the action or process of working together to the same end. There is thus a progression from alignment (which includes coordination, as they are similar in meaning) through to full integration. Both alignment and integration would improve cooperative environmental governance. In some situations there will be a range of possible outcomes on a progression from alignment to integration, and the text will capture this using the phrase 'alignment/integration', which means 'alignment and where appropriate integration'.

Integrated Environmental Management seeks to incorporate environmental considerations as early as possible into the planning processes of all spheres of government and organs of state. Alignment between and within spheres of government, and between organs of state, should transpire in both strategic planning as well as in day-to-day decision making, implementation, monitoring and enforcement. Whilst there is strategic alignment between the various policy documents such as the NDP, the NSSD and other policies, there is often a lack of consistency and coherence in the interpretation and implementation of these policies by government functionaries. Currently, project level planning and implementation is characterised by fragmentation and duplication of authorisation processes (including environmental authorisation, permitting and licensing), which often leads to frustration among role-players. Hence there is a need to enhance inter-governmental cooperation and align decision making, taking into account a wide range of factors, but focused on the goal of sustainability or sustainable development.

Currently, project level planning and implementation is characterised by multiple rather than integrated decision making processes, especially within the environmental management field (e.g. environmental authorisations, water use licences, atmospheric emission licences, waste

management licences and coastal discharge permits). These environmental authorisations often coincide and overlap with approvals required in other functional fields such as prospecting and mining rights, clearance of virgin land for agriculture, and land use approvals – all related to the use of natural resources. This fragmentation and duplication of authorisation or licensing or permitting processes often leads to frustration amongst all role-players. Hence, there is a need to enhance inter-governmental cooperation and aligned decision making, taking into account a wide range of factors, but focused on the goal of sustainability (or sustainable development).

Sustainable development is not achieved by only focusing on project level decision making. Achieving sustainability outcomes calls for the development of an appropriate strategic context within which to evaluate and measure the contribution of individual projects in moving towards a desired sustainability goal. As such the goal should be to 'plan for sustainability', requiring a higher level of coordination between strategic environmental planning and development planning (e.g. SDFs), inclusive of sector planning (e.g. transport planning and integrated waste management plans).

Pillars for Building Platform 2

Pillar 1: Environmental considerations and priorities are integrated into the policies, decision making and operations of all relevant government departments.

Pillar 2: Legislation and policies governing Integrated Environmental Management are coherent, consistent and avoid duplication.

Pillar 3: An enabling institutional framework (including legislation, policy and institutional forums) facilitates cooperation and improves alignment and integration across different sectors and between provincial, national and local spheres of government, promoting an integrated approach to sustainability; there is alignment of strategic plans and frameworks, decisions and implementation, and environmental management is integrated into local decision making.

Pillar 4: Strategic spatial development plans and frameworks such as SDFs are informed by environmental planning tools whose intent, content, timing and scale facilitate integration with SDFs.

Pillar 1

Environmental considerations and priorities are integrated into the policies, decision making and operations of all relevant government departments.

Pillar 2

Legislation and policies governing Integrated Environmental Management are coherent, consistent and avoid duplication.

In a legal audit that was commissioned by DEA in 2010 and completed in 2012 (Mintech WG report, 2012), it was highlighted that there is still much fragmentation, lack of co-ordination and in some instances also duplication related to the regulatory functions in environmental management. These hinder the imposition of a fully functioning aligned and integrated permitting system. Whilst significant law reform initiatives have taken place since the completion of the legal audit, there are still areas of duplication, fragmentation, or a lack of integration.

The difference between cross-functional cooperation, the alignment of statutory decision making mandates, and the transfer of decision making mandates

A clear distinction must be made between cross-functional cooperation, the alignment of statutory decision making mandates, and the transfer of decision making mandates. Cross-functional cooperation refers to improved 'cross-pollination' between different functional areas (e.g. between transport and environmental management), leading to integrated thinking in how these mandates are perceived and implemented. The alignment of decision making mandates refers to the coordination of separate decision making mandates to promote an aligned – and even possibly an integrated – consideration of information, and streamlined or more efficient decision making processes. The transfer of decision making mandates refers to instances where the legislative decision making competencies are transferred to another authority that manages a mandate different from the mandate being transferred. Whilst cross-functional cooperation is an imperative, and aligned decision making is promoted, the transfer of decision making mandates is not supported by this Strategy. The transfer of decision making mandates may require legislative reform or even constitutional amendments.

Considering the need for widespread application of environmental management across a range of sectors, there is a real concern that the integrity of the environmental management mandate can be watered down if it is allowed to be transferred to functionaries with different and specific functional mandates such as agriculture, mining or industrial development. In other words, there is a concern that if the environmental policy formulation, planning and regulatory decision making functions are transferred and usurped within the sector specific mandates of other functional areas, the environmental management mandate will be diminished in favour of these other (and often

conflicting) mandates. However, this concern must be qualified – the concern is not related to the incorporation of environmental management consideration into other mandates, which is to be encouraged and facilitated. Rather, the concern is that the call for functional alignment should not lead to a transfer of decision making mandates to functionaries with different mandates.

Special consideration must be given to the relationship between the functional fields of planning and environmental management. Both are cross-cutting functions that traverse – or go across – other functional mandates such as transport, mining, agriculture and tourism. Both functional fields also reflect a high level of overlap, in both strategic and project planning, related to the use of land (i.e. land use zoning in the case of planning, and the wise use of land as a natural resource in the case of environmental management), at a strategic planning level, as well as in project level planning. Therefore, improved alignment between these functions is essential for achieving the goal of 'planning for sustainability', and there is a clear need for functional alignment between planning and environmental management.

Often many of the conflicts that arise between planning and environmental management practitioners are the result of the perception that the two functional fields are mutually exclusive, not acknowledging the integral relationship between these practices. Increased alignment between strategic land use planning and environmental planning can also facilitate streamlined and aligned regulatory decision making at project level.

This Strategy promotes the alignment of regulatory application procedures and the integration of their associated information gathering processes, but the retaining of different decision making mandates; in other words, aligned procedures leading to separate and different but aligned authorisations. This alignment can be taken a step further by integrating decision making as well as regulatory information gathering processes; in other words, one integrated process (sometimes called a 'one-stop process') and one integrated authorisation (sometimes called a 'one-stop shop'). However in the highly fragmented institutional and legislative context of environmental management in South Africa, the goal of aligned procedures with separate authorisations is more achievable. The advancement towards integrated authorisation should however be aspired to specifically where the mandate of decision making for various different authorisation processes (e.g. environmental authorisation, permitting and/ or licensing) is contained within one department.

Fragmentation of the environmental management mandate

Reference is often made to the fragmented legislative landscape governing environmental management in South Africa. However, barring the creation of a single entity and a single act, it is inevitable that some fragmentation will occur. However, it is the level of fragmentation that matters, and the ability of government to put in place appropriate institutional frameworks to avoid the negative implications thereof and promote cooperative governance.

Institutional fragmentation

Institutional fragmentation can occur between the three autonomous spheres of government in South Africa, namely, the national, provincial and local spheres, with each sphere having environmental management mandates and/or responsibilities. Notably, the environment is a concurrent nationally and provincially assigned mandate. However, municipalities still indirectly have a responsibility to perform their functions in a manner that is consistent with the NEMA principles and the environmental rights enshrined in the Constitution.

Institutional fragmentation can also occur within one sphere of government due to the existence of various independent and autonomous departments, or line functions, each with its own mandate governing some component of the environment and the use of different resources, for example, minerals, water, land, agricultural resources and heritage resources. There is even a further level of fragmentation within certain line functions, where, for example, waste management, pollution management, coastal management, impact management and biodiversity management are overseen by different units within environmental departments.

The institutional framework relating to environmental governance is thus fragmented, which requires a high level of cooperation and coordination to counter the negative effects of fragmentation.

Legislative fragmentation

The South African framework for environmental legislation and its implementation is also fragmented. Fragmentation occurs when national and provincial legislation both govern the same mandate, for example, in biodiversity management. Even though the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) is the primary act governing biodiversity, there are several statutes that operate in the provincial sphere that govern some aspect of biodiversity management.

Legislative fragmentation is apparent in the various specific environmental management acts that govern different components of the environment, such as water, the coast, air quality and biodiversity. Whilst law reform initiatives are increasingly creating enabling provisions that facilitate the alignment or integration of regulatory processes and decision making, some statutes (and the implementation thereof) still result in duplication and time delays.

Fragmentation should not always be considered a challenge, as it has the significant benefit that each environmental component (e.g. water, waste, heritage) has its regulatory ‘watchdog’. Nevertheless fragmentation is a problem when it results in the duplication of regulatory procedures, causes conflicts (directly or indirectly due to different interpretations by functionaries), and delays decision making. Careful consideration should be given to strengthening the institutional structures that have been established, to support functional alignment and, where appropriate, integration.

Efforts to foster improved cooperative governance should be strengthened and, if required, law reform should be considered to streamline regulatory procedures and achieve the alignment of decision making processes.

Institutional structures to support cross-functional cooperation, alignment and integration

Careful consideration should be given to strengthening the institutional structures that have been established, to support cross-functional cooperation and alignment/integration. In the provincial sphere, the environmental management function is amalgamated with other functions such as economic development, agriculture, tourism, and in certain instances development planning. Considering the high level of overlap between the functional areas of planning and environmental management as discussed above, the most desirable combination will be to combine planning and environmental management into a single department, e.g. in provincial spheres of government. Currently, it is only the Western Cape where these functional areas are combined within a single entity. Regardless of the organisational structure that exists, the alignment/integration of functional areas of planning and environmental management must not lead to the undermining of either of the mandates.

In state departments with core mandates other than environmental management (for instance, mining, agriculture, or economic development), the notion of establishing environmental units within these departments is supported. Even though these units have no environmental management decision making mandates, they can contribute towards the execution of these other mandates in a manner that increasingly focuses on sustainable outcomes, which acts towards the goal of cross-functional cooperation. In addition, or alternatively, through increased awareness raising and active cooperation agreements between environmental departments and other line function departments, improved decision making can be achieved, where the environmental departments provide active functional support to other departments, as and when needed. This option promotes the notion of transversal management. Note that the transfer of environmental decision making mandates to these departments is not supported.

In local government, there are significant differences between the environmental capabilities of local and metropolitan municipalities. The metropolitan municipalities mostly have well capacitated environmental management units. In local municipalities the environmental management function is placed invariably within other departments, which is indicative of the fact that environmental management is not a constitutionally assigned local authority mandate. However, there is a constitutional responsibility that vests in municipalities to perform their legislative and executive mandates in an environmentally responsible manner. In other words, this environmental responsibility is inherent in all the constitutional mandates and does not constitute an additional mandate.

Alignment between the Specific Environmental Management Acts (SEMAs)

Within the environmental sector, the potential for alignment and integration between the Specific Environmental Management Acts (SEMAs) should be reviewed. Several SEMAS exist under the umbrella of the NEMA, including the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) (NEMAQA), the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) (NEMWA), the National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008) (ICMA) and the National Water Act, 1998 (Act No. 36 of 1998) (NWA). There is also scope for improved alignment/integration of regulatory processes between the SEMAs and other statutes, including the National Heritage Resources Act, 1999 (Act No. 25 of 1999), the National Health Act, 2003 (Act No. 61 of 2003) and the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983).

The following challenges must be considered:

- The relationship between the different SEMAs and environmental planning and strategic development planning must be reviewed to ensure that strategic environmental planning is adequately catered for, as well as being adequately integrated into municipal spatial development planning processes.
- The existence of the different SEMAs is evidence of the high level of legislative and institutional fragmentation (vertical and horizontal) that exists in the environmental management field. Recent law reform initiatives have addressed some of the challenges, but have also added to the complexity of determining competent decision making authorities. Although the integration of regulatory procedures, processes and decision making is provided for, effective implementation is still to be achieved. This is problematic as development projects often trigger the need for multiple applications and with it the frustrations of applicants having to follow multiple regulatory procedures.
- There are several inconsistencies between the different SEMAs. For example, although NEMA and NEMWA provide for the development of standards as a basis for negating the need to obtain environmental authorisation, the ICMA and the NEMAQA do not. This limits the use of standards as an environmental instrument.
- The integration of regulatory procedures (i.e. information gathering) in support of Water Use Licences Applications (WULAs) required in terms of the National Water Act and the various regulatory processes required in terms of the other SEMAs, offer significant opportunities for coordination. Currently the criteria which determine when WULAs are required are unclear, and the decision making processes linked to WULAs are long and protracted. The provisions in the NWA and other SEMAs that enable integrated decision making must be explored to improved service delivery.

The National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA)

When a Heritage Impact Assessment is commissioned in accordance with environmental legislation as listed in section 38(8) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA) and in terms of NEMA and the EIA Regulations, the relevant competent authority in terms of NEMA also becomes the competent authority for consideration of the Heritage Impact Assessment, negating the need for a separate authorisation. The environmental authorisation process should ensure that the evaluation requirements of the relevant heritage authority are complied with. Only one authorisation is therefore required. The heritage resource authority will be a commenting party.

While the NEMA makes provision for removal of the need for environmental authorisation by either delisting certain listed activities in geographical areas (through the use of spatial instruments) or through the development of standards, the NHRA does not provide for such flexibility. This means that although it is possible to remove the need for environmental authorisations through the implementation of appropriate environmental management tools, it does not negate the need for approval in terms of the NHRA. This provides a challenge in the implementation of these environmental management instruments.

Practical implementation challenges are experienced due to the fact that applications for statutory approvals are being dealt with by different entities in the various spheres of government. The alignment and coordination in the implementation of regulatory procedures must be improved through improved awareness raising and practical inter-governmental cooperation (formal and informal working arrangements and memoranda of understanding). Best practice examples must also be shared to improve implementation practices.

The National Health Act, 2003 (Act No. 61 of 2003) (NHA)

There are no requirements in health related legislation for the inclusion of Environmental Health Impact Assessments (EHIA) into the NEMA Environmental Impact Assessment (EIA) process. The only requirement in health related legislation in respect of the EIA process is that the Department of Health must comment on environmental impact assessment applications. In instances where a health impact assessment is requested in terms of the NEMA authorisation process, it should be included and evaluated as a specialist input or a specialist report.

Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) (CARA)

The clearing of land for the purposes of cultivation requires approval in terms of the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) (CARA). In certain instances the proposed clearing of land also triggers EIA listed activities and the need for an application for environmental authorisation in terms of NEMA as well as an application for a water use licence in terms of the NWA. In practice, in instances where approvals in terms of all three statutes are

required, the EIA process and the issuing of an environmental authorisation precedes the issuing of the approvals in terms of the CARA and the NWA. As such, there is an opportunity for improved alignment/integration of regulatory application procedures, as well as decision making processes. There is also a need for strategic planning to guide agri-environmental decision making, especially in geographical areas where there is a heightened potential for land use conflicts.

The Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA)

Duplication currently occurs between NEMA and the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA) because the MPRDA also aims to regulate environmental management of mining by means of environmental management plans and programmes. At present the competent authorities in terms of NEMA and the Department of Mineral Development, as decision making authority for the MPRDA, are both commenting authorities in each other's authorisation processes. The alignment process currently under way aims to remove all environmental management provisions from the MPRDA and transfer them to the NEMA, with the Department of Mineral Development as the competent authority in terms of NEMA, in so far as listed activities in respect of mining related developments are concerned. In future, as the Department of Mineral Development becomes a NEMA competent authority, the timeframes for these processes will be aligned although separate authorisations will still be issued (i.e. an environmental authorisation and MPRDA permit/right). In principle the removal of duplication by consolidating all environmental management provisions in NEMA is widely supported. The transfer of environmental decision making mandates to functionaries managing other mandates (such as mining) is however not desirable and should not be repeated in future.

Alignment between planning legislation and NEMA

Spatial Development Planning

Alignment between planning legislation and NEMA, and their implementation, should be improved. The requirement that SDFs should include a strategic assessment of their environment impact is already provided for in the current Municipal Planning and Performance Management Regulations of 2001 (C2, S2 (f)). The Municipal Systems Act (MSA) also provides for the alignment of IDPs (and accordingly SDFs) with national and provincial plans and strategies, which could include EMFs. The integration of strategic environmental management instruments (e.g. EMFs and SEAs) into strategic planning processes will further be enabled specifically by the enacted Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013) (SPLUMA) (assented to in August 2013). In particular, section 12(1)(m) of SPLUMA provides that the national and provincial spheres of government and each municipality must prepare Spatial Development Frameworks that take cognisance of any environmental management instruments adopted by the relevant environmental management authority. Section 21(j) provides that municipal Spatial Development Frameworks must include a strategic assessment of the environmental pressures and

opportunities within the municipal area, including the spatial location of environmental sensitivities, high potential agricultural land and coastal access strips where relevant.

Increased resources by the environmental management sector towards improving the environmental planning input into spatial planning, especially the IDP/SDF processes overseen by local and provincial authorities. The respective roles of SEAs and EMFs need to be clarified, as these two instruments are currently being recommended and used interchangeably in response to the call for strategic assessment as part of the SDF process.

Regulatory decision making

With regard to regulatory decision making, both the NEMA and the SPLUMA contain provisions that allow for the integration of information gathering (i.e. application procedures) as well as integrated decision making. Given that rezoning and subdivision applications are an exclusive municipal mandate, and that environmental management is a provincial/national mandate, it is more likely that the alignment of information gathering and regulatory processes can be achieved, rather than integrated decision making. The integration of these regulatory processes should be pursued as a priority. In addition, the reduction of information requirements during regulatory processes for projects that are consistent with a credible spatial planning framework should also be pursued. 'Credible' spatial planning frameworks refer to SDFs that are informed by an SEA or EMF that was compiled during the SDF planning process.

The following areas of significant duplication were identified:

- The coordination of regulatory processes (i.e. information gathering) in support of Water Use Licences Applications (WULAs) required in terms of the National Water Act and the various regulatory processes required in terms of the other SEMAs, offer significant opportunities for integration. It is also important to note that the NWA also contains provisions that enable integrated decision making.
- Protected areas and land use planning are covered by, amongst others: the NEMA through its strategic instruments and, to some extent, through its mandate to regulate activities according to geographical areas in the EIA Regulations; the strategic tools contained in the Environment Conservation Act; the National Environmental Management: Biodiversity Act; the World Heritage Convention Act; the National Heritage Resources Act; the Eastern Cape Heritage Resources Act as well as the Bophuthatswana Nature Conservation Ordinance and the Nature Conservation Act (Ciskei). A concerted effort must be made to reduce the level of duplication.
- Conservation of species (threatened or protected) is primarily regulated by various provincial ordinances but ought, more properly, to be covered by the National

Environmental Management: Biodiversity Act and its regulations. A concerted effort must be made to reduce the level of duplication.

- To some extent, marine living resources are covered by both the relevant provincial conservation Ordinances and the Marine Living Resources Act. A concerted effort must be made to reduce the level of duplication.
- Given the nature of waste management activities, there is an inevitable overlap between waste management activities regulated by the National Water Act, the MPRDA and the National Environmental Management: Waste Act. A concerted effort must be made to reduce the level of duplication.

Significant gaps and inadequacies identified in the implementation of legislation governing impact management

Current legislation governing impact management provides a regulatory framework and procedures within which practitioners identify and address relevant impacts. Achieving sustainable outcomes requires practitioners to consider all elements of the environment in a balanced manner in the EIA process.

The following inadequacies of current impact assessment and management practices have been identified, and there is a need to develop instruments and tools to guide implementation practices in order to:

- assess occupational health and safety requirements, or any other consideration of the effect of activities on third party health;
- assess ways in which proposed development can adopt mitigation and adaptation to deal with the impacts of climate change, which represents a significant gap in South African environmental legislation;
- ensure that disaster management requirements are considered in EIA processes; and improve the efficiency and effectiveness of decision making in dealing with disaster events;
- promote the wise use of natural resources in a manner that decouples the rate of economic growth from its dependency on increased (and accelerated) resource use;
- promote the creation of sustainable communities that advance inter and intra-generational equity in the access to and use of resources, as well as distribution of impacts and benefits;
- implement a life cycle assessment approach to the evaluation of impacts and mitigation thereof; and
- adopt a full cost-benefit accounting approach that considers socio-ecological impacts when evaluating the viability of projects.

The legal audit commissioned by the DEA in 2010 and completed in 2012 (Mintech WG 7 report dated 2012) made the following recommendations:

- In addition to specifically providing for cooperative governance, section 24 of NEMA also provides a good basis for integrated permitting. These opportunities should be harnessed and reinforced by their inclusion in other Acts (or by simply requiring that section 24 be used as the base-line authorisation for all activities requiring environmental authorisation).
- Where integrated permitting is not possible, and separate authorisations for a specific activity are required, opportunities should be explored to achieve efficient environmental management including specific legislative obligations to engage in cooperative governance so that processes for authorisation, compliance and closure are linked or aligned.
- Consideration should be given to the implementation of an integrated decision making process related to all environmental resources (including air, land, water and energy). Such an integrated decision making process should adopt a life cycle approach to impact management. Such an approach not only combines the duty of care requirements with the permitting system, it also focuses on a risk based assessment which is not adequately catered for in our environmental system (although it is, to some extent, considered as part of the environmental impact assessment regime). The approach also aims to consider activities within the context of a specific sector.
- Where the above is not possible and more particularly in those instances where the provincial and national departments responsible for environmental management are not the lead agents, it was recommended that specific legislative provision be made for co-operation agreements and the establishment of committees with representatives from various government departments. It was maintained that efficient government participation is not achieved in those instances where a department is simply required to forward an application to another for comment.
- Provision for agreements and committees is already reflected in, for instance, the NEMA, but it is also happening and being successfully used informally. A number of memoranda of agreements with other government departments exist. Furthermore a number of committees are in place, including provincial environmental working committees, which discuss environmental impact assessments, workgroups in respect of the infilling of wetlands and the channelization of rivers, and forums dealing with in- stream flow reduction. Other informal approaches include interaction with local government in respect of provincial and planning frameworks, provincial coastal committees, provincial and municipal air quality and national refineries committees. The Strategic Environmental Forums and Environmental Task Teams are proposed as mechanisms to improve cooperative governance (see discussion under Pillar 3 below).

- The Review also identified additional issues to be addressed in regulatory frameworks, including:
    - the relationship between environmental matters and energy regulation;
    - fiscal incentives and levies for environmental compliance (including self-regulation and good corporate governance) and best practice;
    - obligations on corporate entities to ensure adequate environmental liability accounting practices;
    - a requirement that the overall sustainability of technology used in activities be investigated; and
    - an expanded emphasis on product liability.

Consistent with the recommendations of the legal audit that was conducted in 2012, it is recommended that the regulatory processes in terms of the SEMAs, where triggered, should be used as the information gathering process for all other legally required processes. When considering the recent law reform initiatives as well as the current enabling provisions in NEMA, progress has been made towards alignment and integration. In future, a strong focus should be placed on the establishment of effective institutional frameworks to facilitate cross-functional cooperation, alignment and integration when implementing regulatory functions. Review of policies and legislation should form part of the continuous improvement process.

Actions identified

- Promote increased functional alignment between the mandates of planning and environmental management, to avoid duplication: these fields both reflect a high level of overlap related to the use of land, and constitute overarching functions that apply across all other functional mandates such as transport, mining, agriculture, and tourism; whilst promoting integrated regulatory processes and aligned decision making, the statutory environmental and planning decision making mandates would, however, remain separate.
- Promote the establishment of environmental management units within line function departments (e.g. transport, agriculture, housing, etc.) to facilitate the internalisation of environmental management within these mandates; importantly, this should not include the transfer of statutory decision making mandates to such departments. In addition, or as an alternative to the above, active cooperation agreements between environmental departments and other line functionaries – in which the environmental departments provide cross-functional support – can contribute to increased awareness raising and improved decision making. Such cooperation agreements can reduce the need for environmental staff in the other line function departments, while promoting the notion of transversal management.

- Emphasise coordination, alignment and integration of regulatory functions in future; where the NEMA process is triggered it should be used as the information gathering process for all other legally required processes; and while law reform is not excluded, it should be considered only as a last resort.
- Pursue as a priority the integration of regulatory processes and the alignment/integration of decision making called for under the legislative provisions contained in the NEMA, SPLUMA and the NWA.
- Undertake a wider integrated and holistic review of Chapter 5 of NEMA and its implications for Specific Environmental Management Acts (SEMAs), with a focus on filtering out inconsistencies, conflicts, duplication, and improving alignment.

Pillar 3

An enabling institutional framework (including legislation, policy and institutional forums) facilitates cooperation and improves alignment and integration across different sectors and between provincial, national and local spheres of government, promoting an integrated approach to sustainability; there is alignment of strategic plans and frameworks, decisions and implementation, and environmental management is integrated into local decision making.

As already discussed, all policies, operations and decision making functions of government should become sustainability-led. Firstly, a common understanding of what sustainability implies is required, as a basis for identifying tangible sustainability objectives, indicators and targets. Secondly, the need for capacity building in all relevant organs of state is needed so that they can take ownership of a sustainability-led approach. Thirdly, the success of integrating sustainability targets will depend on the establishment of appropriate institutional frameworks.

An enabling institutional framework for cross-sectoral cooperation and coordination should include the alignment of policy, legislation and the establishment of institutional structures and forums to facilitate such coordination. While the previous pillar discussed the alignment of policy and legislation, this pillar provides recommendations for putting in place the organisational structures required to ensure integration of environmental priorities into the policies, operations and decision making of all relevant government departments. This will require the following interventions:

- The revival of the National Environmental Advisory Forum (NEAF) (previously in Chapter 2 of NEMA) is recommended. The purpose of the Forum was and should be to coordinate and harmonise environmental policies, plans, programmes and decisions of various national, provincial and local spheres of government at a strategic level.
- The sectoral Environmental Implementation Plans (EIPs) and Environmental Management Plans (EMPs) – called for in Chapter 3 of NEMA – should continue to be developed. The intention underpinning EIPs and EMPs is to focus the strategic planning and operations of organs of state on the NEMA principles and identified sustainability objectives. However many EIPs and EMPs failed to achieve the intended outcome because there was a lack of ownership to ensure their implementation: they were done as an additional task or add-on, rather than influencing fundamentally the way in which existing mandates and functions are implemented. The improved performance of EIPs and EMPs is one of the key components of this Strategy. It is therefore recommended that institutional arrangements within relevant environmental decision making departments be improved to ensure that this function receives the strategic support required.
- To improve the performance of EIPs and EMPs, attention should be given to the environmental capacity building required within each organ of state to formulate such plans.

The compilation and implementation of EIPs and EMPs must also be enabled through the appropriate allocation of human resources and funding within these organs of state. In addition, strategic reporting requirements in EIPs must be strengthened, especially with regard to the environmental performance of adopted Spatial Development Frameworks.

- Strategic Environmental Forums should be established to facilitate cooperation and alignment between different sectors and between different spheres of government (national, provincial and municipal). These forums could support and coordinate the formulation of strategic environmental plans (e.g. Environmental Implementation Plans (EIPs) and Environmental Management Plans (EMPs), EMFs, SEAs, the application of other spatial instruments and tools, and other cross-sectoral planning initiatives), as well as streamlining regulatory decision making processes.
- At national and provincial spheres, these forums should be established/maintained to focus on:
    - coordination of different policies, plans, EIPs and EMPs across departments (functional areas) and different spheres based on the achievement of determined sustainability objectives, indicators and targets; in this regard, special attention should also be given to the strengthening of the existing intergovernmental forums (i.e. MinMec, MinTech and the MinTech Working Groups) that have been established within the environmental sector in terms of the Intergovernmental Relations Framework Act, 2005 (Act 13 of 2005);
    - the alignment/integration of regulatory procedures (i.e. application processes and information requirements) and, where appropriate, the alignment/integration of regulatory decision making processes; and
    - the monitoring of the implementation of EIPs and EMPs against sustainability targets.
- For provincial and local government, the establishment and/or the maintenance of forums in terms of the MSA, SPLUMA and NEMA should focus on:
    - facilitating the coordination and alignment of policies, plans and programmes (especially SEAs, EMFs and SDFs), based on the achievement of determined sustainability objectives and targets, as well as the requirements in the provincial EIPs;
    - alignment/integration of regulatory procedures and, where appropriate, of regulatory decision making processes (especially between environmental and provincial planning regulatory processes); and

  - the strategic reporting requirements with regard to the environmental performance of adopted Spatial Development Frameworks against sustainability targets and/or EIP requirements.
  - the establishment of Environmental Task Teams at national, provincial and municipal government to focus on the coordination of regulatory decision making processes related to environmental and land use management applications for specific projects.
- In addition to the Strategic Environmental Forums, other cooperation mechanisms should be encouraged, e.g. MOUs, regular meetings between officials on environmental matters, e.g. catchment committees.

Actions identified

- Revive the National Environmental Advisory Forum (NEAF) (previously Chapter 2 of NEMA).
- Increase the allocation of resources in all relevant environmental management authorities towards the promotion and coordination of the development and implementation of EIPs and EMPs, inclusive of environmental performance monitoring; the NEAF should ensure and monitor that the necessary budget is allocated towards these ends, and attention should be given to the environmental capacity building required within each department to formulate such plans (as addressed in Building Platform 7).
- Establish and maintain Strategic Environmental Forums in national, provincial and municipal spheres to coordinate and align strategic institutional planning (i.e. between different spheres and transversal planning across different functional areas) in support of the compilation and implementation of EIPs and EMPs, sectoral and other SEAs and EMFs, as well as streamlining regulatory decision making processes.
- Establish Environmental Task Teams in the national, provincial and municipal spheres of government to coordinate the processing of project level applications.
- Introduce or refine other cooperation mechanisms such as MOUs, regular meetings between officials over environmental matters, catchment committees, stream flow reduction committees, interaction with local government in respect of provincial and planning frameworks, provincial coastal committees, provincial-municipal air quality forums and national refineries committees.
- Develop capacity building materials – supported by presentations – around the various cooperation mechanisms that are available, both legislated and voluntary, including the advantages and disadvantages of each mechanism; and include criteria for success in capacity training as proposed in Building Platform 7.

Pillar 4

Strategic spatial development plans and frameworks such as SDFs are informed by environmental planning tools whose intent, content, timing and scale facilitate integration with SDFs.

There is a need to enhance the alignment of environmental planning tools (such as SEAs and EMFs) and strategic development plans (such as SDFs). Whilst the current legal framework provided by NEMA regards EIAs, SEAs, EMFs and spatial development tools all as environmental management instruments, this Strategy makes a clear distinction between spatial development instruments that relate to planning legislation (i.e. SDFs) and environmental planning instruments and tools that relate to environmental legislation.

As already highlighted in Platform 1, environmental planning relates to the creation of a strategic context for decision making that ensures that communities can achieve sustainable development and use resources in a way that is good for the ecosystem and human wellbeing.

A spatial development plan or framework is an interpretation and representation of the spatial development vision of a specific authority for a geographical area. In South Africa, Spatial Development Frameworks (SDFs), especially Municipal SDFs, are the planning tool that integrates the activities of organs of state in a specific municipal area, inclusive of Integrated Waste Management Plans, Air Quality Management Plans and Coastal Management Programmes, all of which form part of IDPs.

On a strategic level, all Spatial Development Frameworks (SDFs) in national, provincial and local spheres should be informed by adopted strategic environmental plans. In section 21 of the Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013) (SPLUMA), the compilation of Municipal SDFs is the most explicit in its requirement to consider strategic environmental input, by stipulating that such SDFs must "*include a strategic assessment of the environmental pressures and opportunities within the municipal area, including the spatial location of environmental sensitivities, high potential agricultural land and coastal access strips, where applicable*". This does not imply the mere provision of spatial environmental data as an input consideration, but rather the assessment of a product in terms of its environmental implications. Therefore, the compilation of an environmental planning framework (such as an EMF) prior to the commencement of the SDF planning process will not remove the need for an strategic assessment, as such an assessment is still needed to determine if the information contained in the strategic environmental planning framework was integrated into the spatial development planning process. This Strategy therefore proposes that environmental planning be done as an integral part of SDF processes, in a manner that assesses the environmental implications of spatial development planning proposals on the environment.

The existence of 'credible' development planning frameworks are therefore regarded as a prerequisite for setting an appropriate vision for geographical areas and associated communities, from which sustainability strategies and performance measures in the form of objectives, indicators and targets can be identified.

This Strategy promotes that the 'adoption' of any spatial development planning framework by environmental authorities, for the purposes of streamlining the environmental regulatory requirements (as is provided for in section 24(2) of NEMA), must be dependent on the integration of strategic environmental planning considerations into development planning processes, strategies and outcomes.

Environmental planning therefore represents an environmental management mandate that has to be addressed by environmental management authorities in both national and provincial spheres of government. However, this does not imply that environmental authorities are responsible for compiling all environmental planning inputs. Environmental authorities must, however, retain the mandate to specify content requirements, quality control (i.e. the extent to which the incorporation of environmental planning information was adequately incorporated into development planning frameworks) and set reporting requirements on environmental performance.

In terms of section 16 of NEMA an obligation is placed on provincial governments to monitor and support municipalities in terms of provincial EIPs and the NEMA principles. The Specific Environmental Management Acts also place an oversight responsibility on provinces in terms of the sector plans (e.g. in terms of the NEM: WA, provinces must first approve the integrated waste management plan, where after Council must adopt it as part of its IDP).

The above is consistent with the provisions in section 16(4) of NEMA:

> *"Each provincial government must ensure that -*
>
> *a) the relevant provincial environmental implementation plan is complied with by each municipality within its province and for this purpose the provisions of subsections (2) and (3) must apply with the necessary changes; and*
>
> *b) municipalities adhere to the relevant environmental implementation and management plans, and the principles contained in section 2 in the preparation of any policy, programme or plan, including the establishment of integrated development plans and land development objectives."*

Provincial Environmental Implementation Plans should also require Municipal SDFs to include a strategy to stipulate how compliance with the provincial EIP will be achieved. Such a strategy should be approved by the relevant provincial department responsible for environmental

management and will form the basis for performance reporting by municipalities in terms of section 16(4) of NEMA.

The use of EMFs as environmental planning tools

An EMF is an adaptable environmental planning tool that can be applied at different scales and purposes (e.g. environmental planning support for the proposed establishment of an Industrial Development Zone within part of a municipal area, or providing environmental information at the scale of a municipal area). Clear guidance is needed on the purpose, content and scale of these different types of EMFs to ensure that the integrity of the instrument is maintained.

In instances where EMFs are to inform SDF planning processes, the following should be considered (and incorporated into guidelines):

- The boundaries, scale and timing of such EMFs should be aligned with SDFs. Aligning the scale and boundaries of these two instruments must therefore acknowledge and cater for the fact that SDFs can be conducted in local, provincial, regional and national spheres of government.
- The process of formulating EMFs is adjusted or expanded to explicitly and consistently include the following:
    - identification of sustainability vision, principles, objectives, indicators and targets;
    - identification of environmental opportunities and constraints in terms of achieving the sustainability objectives and maintaining the 'desired state of the environment';
    - identification of environmental 'limits of acceptable change'; as well as 'targets for environmental improvement' within the management guidelines proposed; and
    - identification of management guidelines that not only relate to broad land use (wise use of land as a resource) recommendations, but also to non-spatial aspects (e.g. fishing quotas) and to governance issues such as institutional coordination, environmental capacity building, environmental policy gaps, among others.

An EMF should be compiled at the same time as the drafting of the SDF (i.e. to coincide with the SDF planning process), and such an EMF process should strategically assess the Spatial Development Framework proposals (in a fully integrated process). If an EMF is compiled prior to the commencement of the SDF process, an SEA should still be required as part of the SDF process (i.e. assessing the environmental implications of the spatial development proposals and the extent to which the EMF information was considered in the drafting of the SDF).

In cases where SEA has been identified as the fit for purpose tool or if an EMF was not drafted as an integrated part of a SDF process, a SEA process should be followed. It is not necessary to legislate for a detailed step-by-step SEA process in every instance as it is important that the nature

of the SEA responds to contextual conditions such as the particular purpose of the study and the existing information available, as well as the stage in decision making it is to inform. Existing guidelines (e.g. DEAT, 2007) should be reviewed to ensure that the different types of SEA are suitable to different decision making contexts, and to provide guidance in support of possible SEA regulations.

More guidance is required on the nature, intent, content, timing and scale requirements of strategic environmental planning instruments and tools, to ensure effective integration thereof into strategic development frameworks. Appropriate criteria need to be provided for the compilation and adoption of such instruments and tools.

It is proposed that mandatory environmental planning instruments (such as SEAs and EMFs) are introduced for sector-specific policies such as transport planning, agriculture, aquaculture, and forestry. These should be undertaken with the support and guidance of the appropriate Strategic Environmental Forum.

Special attention should also be given to strengthen and secure the strategic environmental planning mandate in NEMA, as well as in the drafting of provincial Environmental Implementation Plans. Care should be taken to ensure that the environmental planning mandate is retained as the mandate of environmental authorities (i.e. not the compilation, but the content requirements and quality assurance thereof).

A national capacity building programme should be implemented around the formulation of environmental planning instruments and tools, especially their specific inclusion into SDFs. This recommendation is included in the requirement for capacity building under Building Platform 5 and Building Platform 7.

Aligning decision making at project level

When formulating project proposals and evaluating project specific applications, it is necessary to consider the strategic context within which such applications are situated, inclusive of the broader societal needs and the public interest. This strategic context should be provided by an appropriate strategic planning document. Mostly, this will constitute an EMF and/or an SEA, or a Municipal SDF that has been informed by strategic environmental planning considerations and adopted by the competent (environmental) authority in terms of section 24(2) of NEMA.

If the alignment of the environmental planning and the Spatial Development Framework has been achieved (and the final product adopted by the competent environmental authority), the actual decision making at project level, i.e. land use applications and applications for environmental authorisations, should also be aligned (provided that a development proposal is consistent with its strategic context).

The development and implementation of other environmental management instruments such as norms or standards, or tools related to compliance monitoring and enforcement should also be aligned with the strategic context.

Building Platform 3 discusses the application of 'fit for purpose tools'. This implies that in certain cases where the strategic context has been determined and aligned and the environmental impacts are known, they can be mitigated by a generic set of conditions and/or standards. Standards as an EM instrument will in such cases be better 'fit for purpose', and can be enforced in the national, provincial and local spheres. There should also be more successful cooperation between spheres of government to implement, enforce and monitor environmental authorisation conditions. Standards and conditions are much easier to enforce at site and building plan level, and local authorities should accept their responsibility in this regard as implied in NEMA.

Relevant capacity building and training on aligned/integrated decision making should occur within all relevant departments and spheres of government, as included in Building Platforms 5 and 7.

Actions identified

- Compile environmental planning frameworks as an integral part of SDF processes, in a manner that assesses the environmental implications of spatial development planning proposals on the environment; should an environmental planning instrument (such as an EMF) be completed prior to the commencement of the SDF planning process, a strategic assessment should be conducted to determine if the information contained in the strategic environmental planning framework was integrated into the spatial development planning process.
- Strengthen and secure the strategic environmental planning mandate in NEMA and in the drafting of Environmental Implementation Plans; care should be taken to ensure that the environmental planning mandate is retained as the mandate of environmental authorities; this mandate includes the setting of content requirements for the compilation of strategic environmental planning frameworks (not the compilation of the frameworks *per se*), determining performance criteria for the incorporation thereof into Spatial Development Frameworks, and setting reporting requirements to evaluate environmental performance for the implementation of such 'adopted' (or credible) Spatial Development Frameworks.
- Require Municipal SDFs to include a strategy which stipulates how compliance with the provincial Environmental Implementation Plan, or the stated sustainability objectives of the SDF, will be achieved; such a strategy should be approved by the relevant provincial department responsible for environmental management and will form the basis for performance reporting by municipalities in terms of section 16(4) of NEMA.
- Regulate a set of minimum criteria for the SEA process in response to the SPLUMA requirements for the strategic assessment of Municipal SDFs; while it is probably not

necessary to legislate for a detailed step-by-step SEA process, SEA guidelines should be updated to support the new regulations.

- Provide clear guidance on the purpose, content and scale of the different types of EMFs, as applied at different scales and for various purposes, to ensure that the integrity of the tool is maintained. The relationship between SEAs and EMFs should also be clarified.
- Provide guidance on how to consider the strategic context in the formulation of project proposals, and in the evaluation of project specific applications.
- Provide clear policy guidance on the nature, role and use of the different environmental spatial and management instruments and tools referred to in NEMA, in the form of information documents or other appropriate means.
- Amend NEMA to require mandatory SEAs, EMFs or other environmental instruments (i.e. environmental planning tools) for sector-specific policies such as transport planning, agriculture, aquaculture, and forestry, among others; these should be undertaken with the support and guidance of a Strategic Environmental Forum in the appropriate sphere of government.
- Compile a clear framework on the roles and responsibilities of local authorities in the implementation and enforcement of certain environmental management functions; the framework must state the knowledge and resource requirements for local authorities to perform these functions, which could be expanded to include, for example, the monitoring and enforcement of environmental conditions of approval, the development and enforcement of norms and standards related to listed and non-listed activities, and taking on responsibility for EA procedures under certain conditions; there should be public participation in the development of any norms and standards as public participation will not take place at project implementation; this framework should include a set of criteria formulated by the Environmental Task Team, in consultation with local authorities, which should relate to aspects such as the capacity of the local authority to administer IEM processes, as well as the effectiveness of their environmental management systems.
- Address the institutional requirements (e.g. financial and human resources) for fulfilling the strategic environmental planning mandates in the strategic operational plans of environmental management authorities in the national and provincial spheres.
- Implement a national capacity building programme around the formulation of EMFs, SEAs or any other environmental instrument, especially when such instruments are considered in the compilation of SDFs; this requirement is included in Building Platforms 5 and 7.
- Implement relevant capacity building and training on aligned/integrated decision making within all relevant departments and spheres of government, as included under Building Platforms 5 and 7.

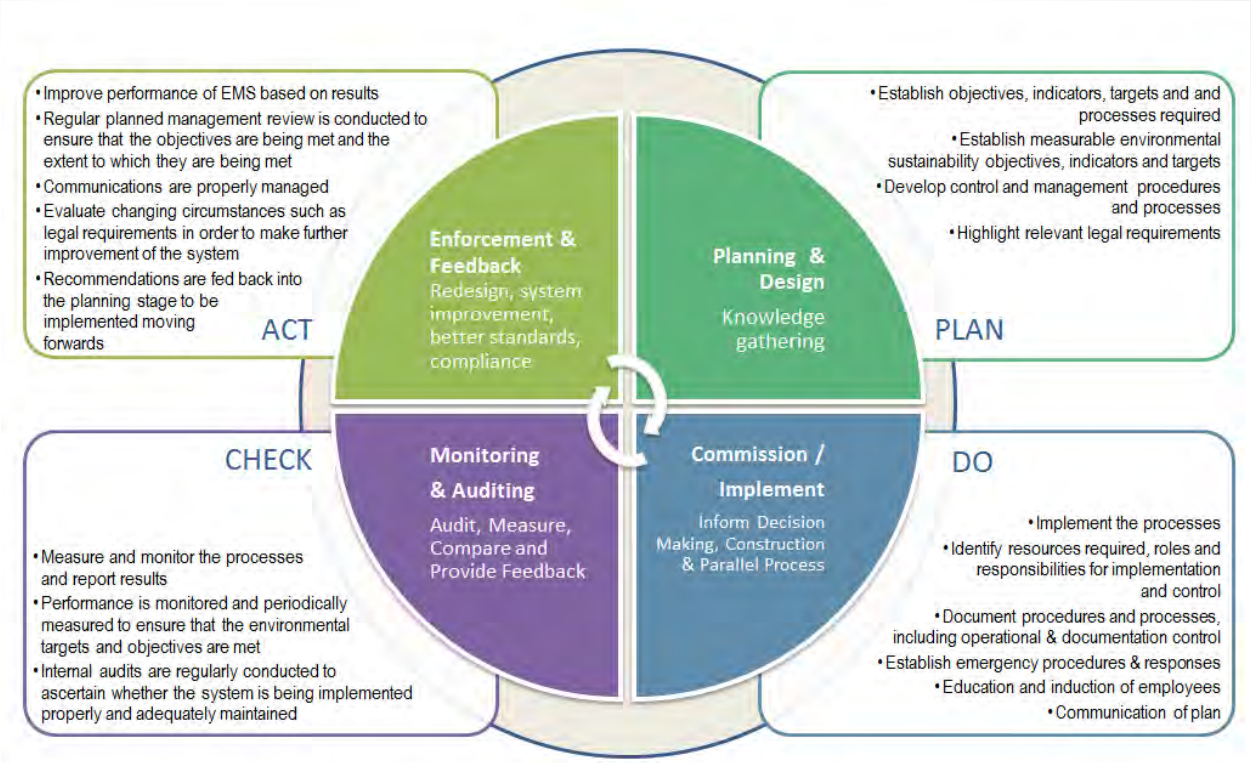
3. Building Platform 3

Monitoring and evaluation of socio-economic, ecological and IEM systems and processes lead to adaptive management.

Building Platform 3 addresses Root Cause 3: Lack of mechanisms for monitoring, evaluation, feedback and adaptive management, and conflict resolution.

IEM is a cyclic process and should take place within a management paradigm with relevant 'Plan, Do, Check and Act' phases (refer to Figure 5). All the phases of management should be implemented for a system to be successful. In the current system, the check and act phases are neglected. It took 10 years before the current IEM system, based on EIA as the only compulsory tool, was reviewed within the 'Review of the Effectiveness and Efficiency of EIA' (REE) study. The IEM system needs to be monitored and evaluated on a more frequent basis against the pre-determined sustainability objectives, indicators and targets to determine if it is successful in moving towards the attainment of sustainability. Internal audits should be regularly conducted to ascertain the quality of the system, whether the system is being implemented properly, whether the processes and procedures are being adequately maintained and monitored, and to determine if there is consistency in decision making. If needed, adaptive management should take place earlier rather than later.

Cooperative governance, knowledge and information systems, public participation, capacity building, training and the availability of environmental management instruments and tools should be provided for and used during all phases of the management cycle.



Phases of Integrated Environmental Management

FIGURE 5 CONCEPTUALIZING MONITORING AND ADAPTIVE MANAGEMENT

The different environmental management typically include and address the following actions and questions. The 'Plan, Do, Check, Act' cycle is equally applicable to corporate and public sector entities although the specific actions and questions might vary depending on the context:

- Plan: What are the vision, policy and principles, and the agreed sustainability objectives, indicators and targets?
    - Establish sustainability objectives, indicators, measurable targets and processes required;
    - Undertake strategic environmental planning for the country that is sustainability-led, responding to the agreed sustainability objectives, indicators and targets;
    - Develop control and management procedures and processes; and
    - Highlight relevant legal requirements, e.g. identify activities that may have a significant impact on the environment.
- Do: Who is responsible for implementation; how and when should implementation transpire in order to achieve sustainability targets?
    - Identify resources required, roles and responsibilities for implementation and control;
    - Document operational and reporting procedures and processes;

    - Establish emergency procedures and responses;
    - Educate and induct employees, to ensure they can competently implement the necessary processes and record results; and
    - Communicate information about plans and engage with participants across all levels of an organisation, especially senior staff, and with stakeholders in society including politicians, representatives of relevant sectors, academia, professional associations, civil society and NGOs.

- Check: Has implementation transpired in line with implementation plans and has it achieved the sustainability targets?
    - Monitor the processes in terms of sustainability targets and report results;
    - Monitor performance using periodic measurement to ensure that the environmental objectives and targets are being met;
    - Conduct regular internal and external audits to evaluate the quality of the system, to ascertain whether the system is being implemented properly and the processes and procedures are being adequately maintained and monitored.
- Act: What actions need to be taken to address shortcomings if implementation has not been successful and/or sustainability targets have not been achieved?
    - Take action to improve performance of the IEM system based on results;
    - Conduct regular planned management review to evaluate the extent to which the sustainability objectives are being met;
    - Adapt management processes;
    - Evaluate changing circumstances, such as legal requirements, in order to make recommendations for further improvement of the system; and
    - Feed recommendations into the next iteration of the planning stage, to be implemented in moving forward.

Pillars for Building Platform 3

Pillar 1: Monitoring and evaluation of the IEM systems and processes leads to adaptive management, which achieves best practice and continual improvement.

Pillar 2: The check (monitoring) and act (enforcement) phases of IEM systems and processes are effective.

Pillar 3: Regular evaluation of sectoral policies and strategic plans, policies and programs (impacting on the environment) takes place to measure and achieve alignment with NEMA principles and sustainability objectives, indicators and targets.

Pillar 4: Conflict is avoided by applying best practice in all IEM systems and processes as well as incorporating the NEMA principles into all sector policies and plans (e.g. through mandatory SEA); the extensive provisions in Chapter 4 of NEMA regarding 'Fair Decision-making and Conflict Management' are upheld and effectively implemented.

Pillar 5: Cooperation and co-regulation is encouraged, to avoid negative environmental impacts and promote sustainability.

Pillar 6: All stakeholders are aware of their rights (e.g. whistle blowing) to ensure the monitoring and enforcement of environmental laws and regulations; such awareness is built through large scale capacity building.

Pillar 7: Local authorities assist in the enforcement of development conditions of approval.

Pillar 1

Monitoring and evaluation of the IEM systems and processes leads to adaptive management, which achieves best practice and continual improvement.

Pillar 2

The check (monitoring) and act (enforcement) phases of IEM systems and processes are effective.

Pillar 3

Regular evaluation of sectoral policies and strategic plans, policies and programs (impacting on the environment) takes place to measure and achieve alignment with NEMA principles and sustainability objectives, indicators and targets.

As discussed, a full cyclic management paradigm should be enhanced within IEM. The NDP, NSSD and Building Platform 1 speak to a sustainability-led path and approach. Outcome 10, the MTSF and Building Platforms 1 and 3 call for the setting of specific sustainability objectives, indicators and targets for IEM. These indicators and targets should be contemplated and

determined during the '**planning**' phase and the necessary processes, procedures, legislation and capacity should be put in place during the '**doing/ implementing**' phase.

While Environmental Outlook Reports (as Desired State of the Environment Reporting) may be utilised to determine sustainability objectives, indicators and targets, the success of achieving sustainability targets should be measured during the checking and monitoring phase. State of the Environment Reports (as example) can be used as an instrument to monitor the success of the IEM system in achieving sustainability, against the pre-determined sustainability objectives and targets. The existing draft SOER or so-called Environmental Outlook Report (following on the 2006 SOER) refers to the efforts that have been made to develop quantitative indicators or indices of sustainable development and environmental sustainability. Currently there is no accepted set of indicators; however two initiatives have gained popularity over the last couple of years, namely the Ecological Footprint (EF) and the Environmental Sustainability Index (ESI) (DEAT).

The Ecological Footprint measures people's natural resource consumption and quantitatively assesses the biological productivity (the amount of nature) required to produce the resources (food, energy, and material) and to absorb the wastes of any individual, city, region, or country.

"People consume resources and ecological services from all over the world, so the Ecological Footprint is the sum of these areas, wherever they are on the planet... The Ecological Footprint for South Africa is 2.8 global hectares (gha) per person, compared to the world average of 2.2 gha per person and the average for Africa of 1.2 gha per person. South Africa ranks 42nd out of 148 countries." (DEAT, 2013: p. 7) Because of South Africa's relatively high carbon emissions, the nation's energy footprint is high when compared to other countries in Africa.

"The ESI differs from Ecological Footprint analysis in that it focuses on a broader measure of environmental conditions rather than on a single dynamic." *(DEAT, 2013: p. 8)* The ESI includes resource consumption, using the Ecological Footprint as a factor because of its obvious relevance to sustainability. In addition, the ESI also tracks many other aspects of environmental stewardship, particularly those associated with pollution and environmental public health.

> *"The ESI score quantifies the likelihood that a country will be able to preserve valuable environmental resources effectively over a period of several decades. Put another way, it evaluates a country's potential to avoid major environmental deterioration. The higher the score, the more likely it is that a country can provide its citizens with high levels of environmental quality and services into the foreseeable future. In 2005, South Africa managed an overall ESI score of 46.2, with a ranking of 93rd out of 146 countries. Compared to member countries of the New Partnership for Africa's Development (NEPAD),*

South Africa ranked 20th out of 40, with Gabon, the Central African Republic, Namibia, and Botswana in the first four places.

Even considering the individual components of the ESI, South Africa's ranking was lower than expected. For the ESI's 'environmental systems component', South Africa was ranked 85th (with air quality and water quality and quantity contributing to the low ranking). For the component 'reducing environmental stresses', South Africa was ranked 111th (with reducing air pollution, reducing waste and consumption pressures, and reducing water stress contributing to the low score)... Because of uncertainties such as measurement error and missing data, both of these initiatives should be seen as providing relative rather than absolute gauges of environmental performance. Nevertheless, South Africa's ranking in both of these measures has slipped over the last few years, indicating increasing pressures on environmental systems and current weaknesses in our ability to deal with these pressures." (DEA, 2013: p.8)

The '**checking and monitoring'** phase should therefore be refined by monitoring against specific sustainability indicators and targets – to be set during the planning stage as called for in Building Platforms 1, 2 and 3. Continual monitoring of the IEM system processes and procedures should also occur, to ascertain the quality of the system and whether it is being implemented properly, whether the processes and procedures are being adequately maintained and monitored, and if there is consistency in decision making.

Further to the above, the regular evaluation of other sectoral and strategic plans impacting on the environment should become priority. The success of IEM is dependent on the successful integration between sectors. As discussed in Building Platform 1, other sectors should take ownership of the sustainability objectives, indicators and targets, as it is not and cannot be the sole responsibility of environmental authorities to achieve the targets if the country is to be set onto a sustainability path. Building Platform 2 indicates the important role that the proposed Strategic Environmental Forums can play in this regard as well as the proposed re-instalment of the National Environmental Advisory Forum which was provided for in Chapter 3 of NEMA.

The '**acting phase'** should address the shortcomings in the current systems if the pre-determined targets are not achieved or the quality of the system is questioned. This may include various actions to be taken from the identification, review and adaptation of unsustainable sectoral plans in other departments, to reforming the total IEM system or legislation or bolstering other on-going actions such as capacity building, amendments to regulations, and adaptation of instruments and tools.

Actions identified

- Monitor and report – in State of the Environment Reports – against the specific pre-determined sustainability objectives, indicators and targets as contemplated in Building Platforms 1, 2 and 3, in outcome 10 and the MTSF, in the Environment Outlook Report and as provided for in strategic environmental instruments such as SEAs and EMFs.
- Monitor the IEM system to ascertain the quality of the system and whether it is being implemented properly, whether the processes and procedures are being adequately maintained and monitored, and if there is consistency in decision making.
- Evaluate sectoral policies, plans and programmes against sustainability objectives at Strategic Environmental Forums, and take the necessary adaptive action if unsustainable practices or activities are being promoted.
- Take the necessary action, arising from the findings of ongoing monitoring of the IEM system, to reform or adapt the system, its processes and/or underpinning legislation, or by bolstering other ongoing actions such as capacity building, amendments to regulations, and adaptation of instruments and tools.

Pillar 4

Conflict is avoided by applying best practice in all IEM systems and processes as well as incorporating the NEMA principles into all sector policies and plans (e.g. through mandatory SEA); the extensive provisions in Chapter 4 of NEMA regarding 'Fair Decision-making and Conflict Management' are upheld and effectively implemented.

Building Platforms 1 and 2 call for the integration of environmental issues into sectoral policies, programmes and plans, by identifying a set of sustainability objectives, indicators and targets to be aspired to. Each sector should take ownership of its set of sustainability objectives. Specific proposals are made – for example in pillar 5 of Building Platform 2 – on the integration of environmental issues into strategic land use planning by the integration of SDFs, EMFs and SEAs. Mandatory SEAs and EMFs are supported for SDFs as well as for other (i.e. other than the environmental sector) sectoral plans.

Chapter 4 of NEMA provides for fair decision making and conflict management. The provisions within Chapter 4 should be utilized if environmental issues have not sufficiently been integrated into other sectoral plans, or if sectoral plans are in conflict with strategic environmental plans. A dispute management strategy has been approved by DEA allowing for the establishment of a panel of mediators and arbitrators, the use of dispute administration service providers, a conflict management system and process and a conflict management operational manual.

Participatory approaches are generally preferred with a focus on consensus building. The proposed Strategic Environmental Forums in Building Platform 2 should work towards participation and consensus. However if consensus can't be reached environmental damaging sectoral plans, program, and policies should be identified and dispute resolution between the relevant Departments should be facilitated. The Environmental Conflict Resolution (ECR) may or may not include a third-party mediator or facilitator.

Actions identified

- Formalise Chapter 4 fair decision making and conflict management procedures specifically for sectoral plans.

Pillar 5

Cooperation and co-regulation is encouraged to avoid negative environmental impacts and promote sustainability.

It is necessary to understand that the management of a listed activity may include a full management cycle. For example, planning of an activity will define a sustainability vision and desired sustainability objectives, indicators and targets, specify how the design of the proposed activity was adapted to meet the sustainability objectives, followed by the identification and evaluation of potential residual impacts. Implementation of the activity should take place in accordance with the conditions of approval laid down in an Environmental Authorisation, where applicable, which implies that such conditions need to be clear in terms of the sustainability performance that is required. Monitoring should take place against the desired targets and stipulated conditions, while enforcement should be triggered in response to non-achievement of set targets and conditions.

At present the IEM system is mainly dependent on a command and control governance model. Monitoring and enforcement are mostly based on a penalty based system (either fines or criminal prosecution) and not a 'carrot and stick' type of approach. A shift towards an economic, fiscal or civil – and agreement based – governance system should be facilitated over the long term whereby incentives (such as green ratings, etc.) are implemented to get all role-players mobilised toward a sustainability path. It is however acknowledged that this will not be an easy task, nor is it going to happen overnight. This implies the need for adequately resourced monitoring and enforcement programmes, as well as public access to monitoring data. The Department of Environmental Affairs is developing a strategy to address compliance and enforcement specifically.

Cooperation, co-regulation and self-regulation should be fostered particularly within the private sector (e.g. through the provision of incentives) to avoid negative environmental impacts and promote sustainability. However any co-management instruments must be appropriate for the specific context. It might be possible, for example, to pursue fiscal/tax incentives for industry to adopt, in what is often termed self-regulation. Such approaches require initial policy action by government (as the regulator) in adopting fiscal or tax measures, which incentivise the desired behaviour and outcomes in the industries targeted for improvement of environmental management practice. It may thus be better not to conceptualise such approaches as a one-sided self-regulation by industry alone, but rather as an approach that requires regulatory action by government to make it happen and the adoption of voluntary, but nevertheless policy directed and incentivised, responses by the industries concerned.

The use of heavy fines for offenders should however be applied when necessary, in addition to the move towards 'co- and self-regulation'. The feasibility of also implementing administrative penalties as a tool to improve compliance should be considered.

The National Environmental Management Laws Second Amendments Act, 2013 (Act No. 30 of 2013) (NEMLA 2) allows for fines up to R5 million per specific listed activity and does not allow for rectification of unlawful activities but allows for the issuing of an environmental authorisation for activities that have commenced unlawfully. Unlawful activities will remain unlawful up to the date of a positive authorisation via the available S24G process. Criminal prosecution can be instituted for unlawful commencement even where a subsequent S24G application for authorisation has been submitted and even authorised.

Developers who have received an environmental authorisation and who are proceeding with project implementation could be required to conduct compliance monitoring according to specifications provided by the relevant competent authority. Such 'self-monitoring' by a proponent shifts the focus of the competent authority towards more checking, auditing and enforcement, when required.

Actions identified

- Compile a medium and longer term strategy on how to shift towards other supplementary governance approaches such as economic, fiscal, civil and agreement based approaches.
- Ensure more effective compulsory compliance monitoring and reporting by proponents, with a shift in focus by authorities to checking and auditing; robust enforcement should however be pursued if transgressions are identified.
- Create an appropriate framework for the introduction of substantial fines.
- Facilitate co-learning by all role-players as fundamental to the creation of an atmosphere in which participatory management and shared responsibility become possible, as further elaborated in Building Platform 7.

Pillar 6

All stakeholders are aware of their rights (e.g. whistle blowing) to ensure the monitoring and enforcement of environmental laws and regulations; such awareness is built through large scale capacity building.

Any person or group of persons may seek appropriate relief in respect of any breach or threatened breach of any provision of NEMA. Whistle blowers must be protected in this regard. Citizen channels for whistle blowing or, more routinely, to provide feedback to authorities could be substantially improved, thereby enabling citizen participation in monitoring and enforcement. This should be enabled by improving the knowledge and information systems as proposed in Building Platform 5.

A network of communication channels should therefore be created for citizen participation in impact avoidance and control at all levels of development planning and implementation.

Significant awareness creation programmes and the dissemination of information to the general public (particularly regarding their rights in terms of NEMA and other environmental legislation) to enable effective participation should be facilitated as per the programmes proposed under Building Platform 7.

Actions identified

- Establish the necessary knowledge and information systems and networks for communication to the general public, providing for access to Environmental Assessments and the tracking and monitoring of non-compliance, and strengthening channels for feedback to and from the authorities, as contemplated in Building Platform 6
- Ensure wide spread capacity building among the general public on their rights to effective monitoring and enforcement of environmental laws and regulations and on their right to participate in such actions, as provided for in Building Platform 7.
- Explore measures on how to ensure protection of whistle blowers within legislation.

Pillar 7

Local authorities assist in the enforcement of development conditions of approval.

The finding in a case considered in the High Court of South Africa supports the role of local authorities in the enforcement of conditions of approval. The Judge concluded as follows in the case of R A Le Sueur versus Ethekwini Municipality, Minister of Environmental Affairs, MEC: Agriculture and Environmental Affairs KZN, MEC: Cooperative Governance and Traditional Affairs and any other interested party:

> "*NEMA recognizes the role of Municipalities and Municipal duties with regard to the environment in its Municipal planning function. It is clear that Municipalities are entitled to regulate environmental matters from micro level for the protection of the environment. Municipalities have traditionally been involved in regulating environmental matters at the local level and their functions at this level have been recognized by the drafters of the Constitution although environmental matters stood as the apparently exclusive area for National and Provincial governance at those levels, it is clear that the authority of the Municipalities at Local Government level to manage the environment at that level has always been and is still recognized. It is inconceivable that the drafters of the Constitution intended by the manner in which the constitution was framed to exclude Municipalities altogether from legislating in respect of environmental matters at the local level. In any event, it is clear that national and provincial legislation in respect of environmental issues recognizes the part to be played by Municipalities at the Local Government level in managing and controlling the environment*." (Le Sueur and Another v Ethekwini Municipality and Others (9714/11), 2013, ZAKZPHC 6)

It is therefore clear that while decision making in terms of NEMA remains a national and provincial mandate, conditions attached to environmental authorisations could be included by the local authority in their land use decisions. If environmental conditions and/or standards have been compiled as part of an integrated process as proposed in Building Platform 2, utilising the Strategic Environmental Committees for integrated strategic planning and Environmental Task Teams for decision making, no conflicting conditions should prevail between land use- and environmental decisions and/or conditions or standards. Local authorities therefore have a responsibility to implement and enforce environmental conditions included in land use planning decisions.

Provision should therefore be made for a clear framework within which local authorities can monitor and enforce environmental conditions of approval and environmental standards in the application of environmental instruments and tools.

Actions identified

- Establish a well-defined framework within which local authorities can apply and enforce environmental conditions of approval and environmental standards in the application of environmental instruments and tools, with clearly identified responsibilities, mandates, systems and processes.

4. Building Platform 4

Environmental management instruments and tools are effective in achieving the objectives of IEM.

Building Platform 4 addresses Root Cause 4: Lack of a systematic approach to the use of environmental management instruments and tools.[3]

Chapter 5 of NEMA identifies various environmental management instruments and tools for possible application in South Africa, including Environmental Management Frameworks (EMFs), Strategic Environmental Assessments (SEAs), Environmental Impact Assessments (EIAs), Environmental Management Programmes (EMPrs), environmental risk assessments, environmental feasibility assessments, norms or standards, spatial development instruments or any other environmental management instruments and tools that may be developed in time. Of these, EIA and EMF have been regulated in legislation, which seek to ensure their consistent and correct application. A wider suite of instruments and tools is also available in other environmental and non-environmental legislation, including integrated environmental programs, environmental implementation plans, bioregional plans, permitting and licensing requirements, amongst others.

Although EIA is the most commonly used and indeed the only compulsory tool in South Africa, it is not always 'fit for purpose', e.g. SEAs are better for cumulative assessments, with EMFs and/or SEAs being better suited than EIAs to delineate the strategic context and set sustainability objectives and targets. A systemic approach to the use of environmental management (EM) instruments and tools is thus necessary in which the most suitable tool for a given application can be used. The principle here is that the objectives of IEM can never be met through a single instrument or tool (such as EIA) but require rather a 'progression' of instruments and tools.

Building Platform 3 (as discussed previously) introduced IEM as a full cycle management process with appropriate plan, do, check and act (PDCA) phases. Certain EM instruments and tools are more 'fit for purpose' in respect of each of these different management phases than others, but that does not necessarily preclude instruments and tools from use in specific management components. The instruments and tools that are most commonly applied to the different management components are illustrated schematically per management component in Figure 4. Again the recognition of the management cycle suggests that for each of the functions required in the different components there should be adequate instruments and tools to respond to these functions. The overemphasis on assessment tools in IEM to date, while failing to consistently and comprehensively address post assessment EM, has been identified as a substantive impediment

[3] Note that NEMA incorporates both terms (viz. instruments and tools) so the same nomenclature has been adopted here.

to effective impact management and the attainment of sustainability. Similarly, there is a widespread view that the planning component of IEM is poor, and that better planning would both improve IEM and potentially reduce the plethora of individual assessments that are currently required.

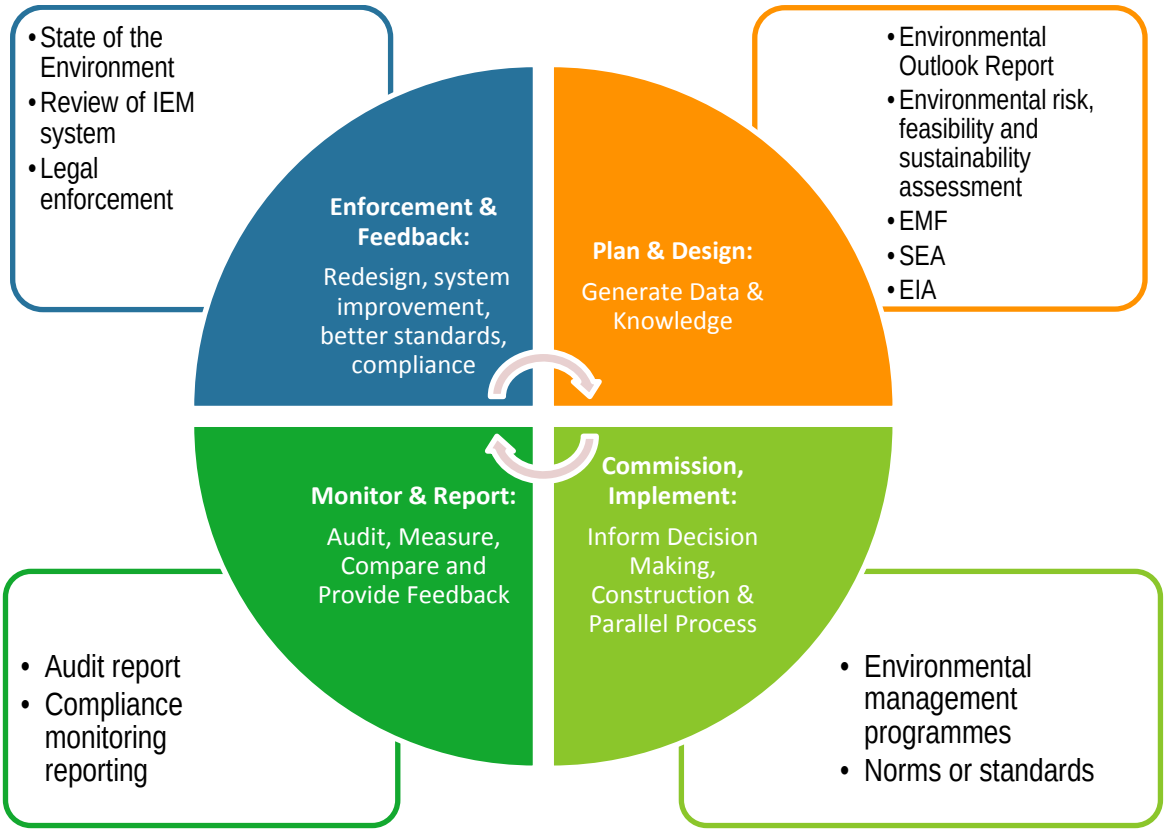


FIGURE 6 EXAMPLE OF FIT FOR PURPOSE EM TOOLS BY MANAGEMENT PHASE

Differentiation is also made between types of environmental management and governance approaches, namely:

- **Command and control**, where 'Command' facilitates setting the standards, which are linked to desired outcomes; and 'Control' facilitates stringent yet pragmatic monitoring and decisive enforcement.
- **Market/Fiscal based instruments** such as taxes, subsidies, tax relief, fees, and charges may be used to stimulate the implementation of measures which improve the environment, closely linked to policies such as the Green Economy and Climate Change.
- **Agreement-based instruments** such as Biodiversity Management Agreements, and International Agreements.
- **Civil based instruments** which empower civil society such as Eco-labelling, performance reporting, technical assistance.

EIA (as the most commonly used tool in South Africa) falls within a command and control governance paradigm with limited utilization of other instruments and tools such as market/fiscal based, agreement-based and civil-based mechanisms. Building Platform 3 promotes the use of such instruments and tools in the long term to support co- and self-regulation, while Building Platform 1 identifies a gap in legislation, in that fiscal incentives and levies for environmental compliance (including self-regulation and good corporate governance) and best practice, are not recognised. If IEM is to meet its purported purpose it needs to be supported by a progression of 'fit for purpose' instruments/tools across all the management components.

Pillars for Building Platform 4:

To give effect to the platform the following pillars are deemed to be required:

Pillar 1: A progression of environmental management instruments and tools exists, with robust and effective information transfer between the different instruments and tools;

Pillar 2: Strategic environmental planning is effected as a priority in the national, provincial and local spheres of government, and for the whole country; instruments such as Environmental Outlook reporting, SOER, SEA and EMF or other strategic spatial tools are utilised, and strategic planning is sustainability-led with clearly defined sustainability objectives, indicators and targets.

Pillar 3: All existing EM instruments and tools are correctly and appropriately applied in particular contexts, and are supplemented by new instruments and tools where gaps become evident.

Pillar 4: Reporting within EM instruments and tools on potential positive and negative impacts of proposed policies, plans, programmes and/or projects – and their potential sustainability performance (measured against the pre-determined sustainability indicators and targets as well as avoidance and minimisation of impacts) – is consistent and effectively informs decision making.

Pillar 5: Legislation, including a list of activities, is the primary mechanism to identify and formalise the adoption of instruments and tools; the list of activities is based on the sensitivity of the receiving environment, limits set for environmental aspects, and the type and scale of activity; the use of EM instruments and tools for non-listed activities is guided by the progression (future framework) for EM instruments and tools and the development planning cycle.

Pillar 6: Strategic environmental instruments and tools adopted by the Competent Authority identify geographical areas where (a) certain activities may be excluded from the EIA requirement or (b) where EIAs can be downscaled to other EM tools such as specialist assessments, standards, and EMPs.

Pillar 7: Spatial environmental instruments and tools adopted by the Competent Authority identify geographical areas where specific listed activities are prohibited or the granting of environmental authorisation is restricted, in order to (amongst others) prevent loss of important ecosystem functions in terms of the pre-determined sustainability objectives, indicators and targets.[4]

Pillar 8: For a selected list of activities the relevant competent authority has the ability and discretion to identify and choose fit for purpose EM tools and instruments based on pre-determined objective criteria and in line with approved/ adopted strategic environmental instruments and tools.

Pillar 9: All government departments provide practical information on the State of the Environment and produce Environmental Outlook Reports, making provision for this activity within their Environmental Implementation Plans (EIPs) and Environmental Management Plans (EMPs); the framework for such information provision is provided by DEA and rests on the intents of the NSSD, NDP, Presidential Outcome 10, MTSF and the pre-determined sustainability objectives, indicators and targets.

[4] the NEMA 2nd Amendment is *"(2A) (a) In accordance with the risk averse and cautious approach contemplated in section 2(4)(a)(vii) and subject to paragraphs (e) and (f), the Minister may by notice in the Gazette prohibit or restrict the granting of an environmental authorisation by the competent authority for a listed or a specified activity in a specified geographical area for such period and on such terms and conditions as the Minister may determine, if it is necessary to ensure the protection of the environment, the conservation of resources or sustainable development*."

Pillar 1

A progression of environmental management instruments and tools exists, with robust and effective information transfer between the different instruments and tools.

What is perceived currently is that the heavy dependency on EIA, within IEM, results in EIA being used beyond its context and appropriate application. Within the IEM requirements this both limits the efficacy of EIA and fails to provide decision makers with an understanding of the limits of what EIA can deliver. It is for this reason that Pillar 1 is proposed to provide credence and recognition to instruments and tools over and above EIA that could be used to improve IEM in South Africa. By 'progression' it is meant that the instruments and tools supplement one another, providing (as a function of the tool in question) specific information that may not necessarily be provided by EIA. The combination of these various instruments and tools can broaden understanding of the key environmental opportunities and constraints for sustainable development.

A concern expressed by various participants in the strategy formulation process is that the 'regulatory certainty' of EIA (given the clear regulatory prescriptions that apply to EIA) will be potentially lost in the progression of EM instruments and tools, and there will be too much discretion left in the hands of the authorities. The principle here is not to allow the authorities to simply choose the instrument or tool they think suitable, but rather to develop detailed criteria that would serve to ensure that instruments and tools are used correctly and consistently, and most importantly that gaps brought about by the over-dependency on EIA would be addressed by the use of other instruments or tools. That said, the regulatory certainty that currently applies in respect of EIA would need to be maintained for all the instruments and tools that could potentially be used.

The purpose of the progression is to ensure that certain functions are effected within IEM that do not necessarily currently exist. These functions are illustrated in Figure 5, and illustrate strategic environmental planning at national, provincial and local spheres covering the whole country by utilising for example, Environmental Outlook reporting, SOER, SEA, EMF or other similar instruments and tools. Such strategic planning would be sustainability-led and where appropriate serve to define sustainability objectives, indicators and targets, and criteria for levels of acceptable change or desired outcomes, all of which would serve to provide a more effective framework within which decision making could occur. The definition of objectives, indicators and targets, and criteria for levels of acceptable change or desired outcomes should be based on best science and include public participation.

The ideal is to have strategic environmental frameworks and plans such as SEAs and EMFs in place for:

- Competent authorities in national and provincial spheres determining the sustainability targets;
- All state departments, provincial departments and local governments (e.g. SEAs for policies, plans, and programmes) in line with the pre-determined sustainability targets;
- Industries and sectors in line with pre-determined sustainability targets (SEAs);
- Spatial planning for the country as a whole by integrating SEAs or EMFs into the National Spatial Development Framework and provincial and local SDFs.

The progression will enable detailed planning, with potentially fewer assessments; moreover impact management can be achieved using more activity specific tools such as EIAs and EMPs. Activity specific tools are typically more reactive, and the focus is on prevention at best but mostly minimization. This means that other, broader instruments are required to address issues such as sustainability targets, avoidance of environmental impacts, need and desirability of activities within certain environmental zones, cumulative impacts, conservation, biodiversity conservation, setting acceptable limits for trade-offs and identifying offsets, and addressing other issues where the overall objective is not just protecting the status quo but also potentially improving the state of the environment.

Practically, these broader plans will provide a context and framework within which specific activities can be assessed, allowed (without necessarily issuing an authorisation) and managed. Decision making at project/activity and specific site scale would be aligned with the broader environmental planning objectives and context so that sustainability targets set at broad level planning are achieved collectively through individual projects. A key success factor would be robust and effective information and knowledge transfer between the broader scale and site/project specific activities; the information/knowledge transfer should occur both ways so that the successes and failures at individual activity level influence the further broad scale strategic planning. Such information and knowledge transfer is detailed in Building Platform 6.

There is an urgent need for strategic environmental planning that results in the broad scale definition of sustainability objectives for the entire country that are translated into indicators and targets. These collective objectives, indicators and targets can then provide a framework within which better decision making can be effected on individual project applications.

In the longer term, the concept of a progression should be developed into a cohesive, comprehensive and coherent framework in which all the various EM instruments and tools – that give effect to IEM – are located in relation to one another and to the levels and different stages of development planning. The framework, which should reflect the progression of EM instruments and tools, will address any issues pertaining to the lack of a systematic approach to the use of such tools in the achievement of IEM (e.g. the failure to incorporate environmental concerns into all

stages of the development cycle, from planning to monitoring and evaluation); or the incorrect or inappropriate application of any of the tools.

FIGURE 7 SCHEMATIC ILLUSTRATION OF THE PRINCIPLE OF A PROGRESSION OF INSTRUMENTS AND TOOLS

Actions identified

- Develop and adopt a comprehensive and coherent framework in which all the various EM instruments and tools – that give effect to IEM – are properly defined in terms of function and method, together with how they influence both one another but also general development planning.

Pillar 2

Strategic environmental planning is effected as a priority in the national, provincial and local spheres of government, and for the whole country; instruments such as Environmental Outlook reporting, SOER, SEA, EMF or other strategic spatial tools are utilised, and strategic planning is sustainability-led with clearly defined sustainability objectives, indicators and targets.

In order to apply a progression of instruments and tools and implement a sustainability led-approach, strategic planning should be done as a priority in all spheres of government and covering the whole country (wall to wall).

As indicated in Building Platform 2, SEAs and EMFs should become compulsory for SDFs, and should be aligned in terms of boundaries, scale and timing. Stated differently it is essential that environmental considerations are directly included in SDFs, and NEMA should make provision for EM instruments to achieve this intended purpose of informing SDFs. Also in terms of Building Platform 2, sectoral SEAs and EMFs should become compulsory for other sectors such as agriculture, aquaculture, forestry and transport, among others.

Actions identified

- Undertake strategic environmental planning as a priority in national, provincial and local spheres of government, for the entire country, by utilising Environmental Outlook reporting, SEA, EMF or other strategic spatial instruments; so that strategic planning is sustainability-led through determining sustainability objectives, indicators and targets in line with the desired outcomes identified in the NDP, MTSF, NSSD and Outcome 10, and deciding on criteria for levels of acceptable change or desired outcomes.
- Prepare SEAs and/or EMFs to specifically inform all Spatial Development Frameworks (SDFs); align the boundaries of EMFs and SEAs with the corresponding SDF's area of jurisdiction, towards wall-to-wall EMFs and SEAs within each province.
- Prepare Sectoral SEAs and/or EMFs for sectors such as agriculture, aquaculture, forestry, and transport, among others, targeting especially those sectors where many EIAs are done currently.
- Provide support to smaller municipalities in order to compile SEAs or EMFs aligned with SDFs.

Pillar 3:

All existing EM instruments and tools are correctly and appropriately applied in particular contexts, and are supplemented by new instruments and tools where gaps become evident.

EM tool selection for a particular activity, policy, plan or project (and/or within each of these levels of development planning) should therefore be provided for in the form of the proposed progression (a cohesive framework in future) wherein the various levels of development planning (which IEM responds to) are matched with the appropriate EM instruments and tools. Such instruments and tools which can be used at each level in development planning (from strategic planning to project design) may also be located within the Plan Do Check and Act cycle of management. As example, at the strategic level the cycle includes formulation of a plan, then implementation, followed by review and revision of the plan in an iterative cycle.

The following improvement of existing available tools is proposed in order to support improvement towards sustainability-led IEM:

- SEAs should be used more successfully to define strategic sustainability objectives, indicators and targets or inform the compilation of strategic planning of other departments, sectors and Spatial Development Frameworks.
- Environmental Implementation Plans (legislated by Chapter 3 of NEMA) should be improved by the following interventions: EIPs must translate broader sustainability objectives into performance indicators and targets in a more specific context. Environmental performance targets must be specified for institutions and individuals in performance plans. EIPs at different spheres must show a through flow of information, a coordination of knowledge, and an alignment of performance targets. Monitoring and reporting of performance must also include performance assessment against specified sustainability indicators and targets.
- EMFs should define strategic objectives, indicators and targets and inform decision making more successfully. EMF should be used to define strategic sustainability objectives, indicators and targets or inform the compilation of strategic planning of other departments, sectors and Spatial Development Frameworks. Scales should be standardised and aligned with SDF scales (if it is specifically compiled to inform a SDF) as proposed in Building Platform 2 and 6.
- Biodiversity Planning should be improved by appropriate standards or legal status and appropriate public participation and should inform spatial planning more successfully (through bioregional plans).

- Norms and Standards should be available for listed and non-listed activities if possible environmental impacts are known. Public participation should be ensured during compilation. Monitoring and auditing should play a more important role.
- Cumulative effects assessment needs to be used when necessary to determine whether or not changes have been, or are likely to be, set in motion that are detrimental to the environment and the people who rely on it.
- Life cycle assessments should play an increased role in various industrial sectors. For example in mining, full life cycle costs better inform the actual costs of the project and inform procedures and safeguards for mine closures.
- Risk assessments should be used to determine a fit for purpose tool when scale and sensitivity of the receiving environment alone do not provide a reasonable choice of tool e.g. a large development with low risk vs a small development with high risk.
- As a sustainability tool, cost-benefit analysis should be able to compare different policy or programme options for government, whereas as a tool in the hands of the private sector it should inform project design by highlighting risks and benefits.
- The following systematic improvements to the EIA process are recommended:
    - Assessment, reporting, the setting of conditions, and monitoring should be sustainability-led and drive towards achieving set sustainability objectives, indicators and targets which are feasible and reasonable to set. With information from strategic environmental planning in place, investigations can be reduced to only those assessments where there are unknown or uncertain impacts. Specialist input should inform project design rather than simply be used to assess impacts of a final design.
    - Impact assessment and significance rating schemes need to be aligned with the impact mitigation hierarchy as elaborated on in Platform 1 – i.e. avoid, minimise, mitigate, reduce over time, rectify and compensate (including compliance monitoring, auditing, and enforcement). As importantly, need and desirability also need to be included. Measurement of impact significance should take place in terms of the contribution towards the achievement of relevant and applicable sustainability indicators, and enhancement of positive influences. Full life cycle accounting should transpire but with a direct link to, or determined through, screening processes. EIA should set standards for Environmental Management Programmes, based on industry experience and related to impact investigation processes. There should be strict requirements for monitoring of implementation and reporting against sustainability indicators and targets. EIA system should be designed in a way that will promote a through flow of information from strategic planning, through the impact assessment and on into the Environmental Management Programmes.

- Environmental Management Programmes (EMPrs) should play a more important role. EMPs should contain as a minimum the environmental management philosophy that will be implemented during the implementation of the activity in question; and should provide a statement of how the authorisation conditions will be met during the implementation of the project in providing an effective bridge between the impact assessment process and implementation. Of critical importance, however, the EMPr should not subvert the power of the conditions of the authorisation. In other words the EIA must still contain recommendations for reducing/preventing impacts so that these can be captured as conditions of authorisation.
- The role of Environmental Management Systems – such as the SANS (ISO) 14001 management system standard – should be expanded in the follow-up stages of EIA, to allow for full cycle environmental management.

The following new instruments, tools or methods are proposed:

- Environmental Outlook (EO) reporting will go beyond traditional State of the Environment Reports, in building on the analyses of past and current trends to outline policy options for the future, leading to different outcomes over the next 20 to 30 years. The EO report should include a clear vision for the desired state of the environment, and provide sustainability objectives, indicators and targets.
- Sustainability objectives, indicators and targets should be used in the assessment phase to contribute to decision making and during implementation when they can be used for auditing purposes. Environmental planning on a strategic level, and specifically planning that drives decision making towards stated sustainability objectives, indicators and targets, has the potential to act as a unifying force in environmental management practice. Some of the benefits of the use of more strategic environmental planning tools include:
  - The formulation a clear and shared vision, sustainability objectives and direction for specified locations, areas or regions.
  - The opportunity to translate strategic objectives into practical measures (indicators and targets) to inform day-to-day decision such as competing land-uses or EIA applications.
  - The formulation of a sustainability framework that serves as reference for the critical review of decisions or planning.
  - The provision of specific guidance to development planning based on broader strategic considerations and context, to steer development away from and avoid sensitive areas.
  - The use of strategic tools can assist in raising the profile of environmental issues in non-environmental forums, or serve in an integrative role.

  - The provision of information on the opportunities and constraints that the environment places on development.
- Compliance assessment and monitoring reporting should receive more attention in order to increase the responsibility of the developer and to inform increased auditing by the authorities and affected communities.

Actions identified

- Develop an action plan for the proposed improvement of the identified instruments and tools such as SEA, EIP, EMF, biodiversity planning, norms and standards, cumulative effect assessment, life cycle assessment, cost-benefit analysis, EIA, EMPr by means of relevant guidelines and regulatory amendments. The action plan will need to assess each tool in detail in order to determine required regulatory amendments or required amended guidelines.
- Develop and refine the identified required new instruments, tools and methods such as setting of sustainability objectives, indicators, targets and Environmental Outlook reporting.
- Introduce mechanisms for improved implementation.

Pillar 4

Reporting within EM instruments and tools on potential positive and negative impacts of proposed policies, plans, programmes and/or projects – and their potential sustainability performance (measured against the pre-determined sustainability indicators and targets as well as avoidance and minimisation of impacts) – is consistent and effectively informs decision making.

EM reporting should include the typical assessment of how a proposed policy, plan, programme or project will impact on the current socio-economic and biophysical environment, but also use this information in the evaluation against sustainability objectives, indicators and targets.

To assist in bridging the gap between current expectations of IEM reporting and the desired reporting in a sustainability-led IEM system, it is necessary to provide specific guidance. This guidance should be produced once sustainability-led approaches have been tested in selected SEAs, EMFs and EIAs. The guidance should, at least, aim to:

- Define sustainability objectives, indicators and targets within the context of existing Presidential Outcome 10 outputs and sub-outputs, the Medium Term Strategic Framework (MTSF) outcomes, and the recommendations of Environmental Outlook Reports, EMFs and SEAs within the national, provincial and local spheres of government.
- Offer advice on how to apply sustainability objectives and specific indicators and targets to proposed developments through considering alternatives and anticipated impacts, and how to make adaptations to proposals to meet the sustainability targets, prior to the identification and evaluation of potential residual impacts.
- Advise on how to report on the sustainability performance of a proposed development.
- Advise on how sustainability performance requirements are to be incorporated into the conditions of approval attached to Environmental Authorisations, noting that, if desired sustainability objectives cannot be achieved, environmental authorisation should not be granted.
- Identify how required sustainability indicators and targets are to be monitored, in terms of monitoring criteria and reporting.

Actions identified

- Develop guideline documents to assist in bridging the gap between current expectations of IEM reporting and the desired reporting in a sustainability-led IEM system; such guidance should be produced once sustainability-led approaches have been tested in selected SEAs, EMFs and EIAs, and should include at least the following:
    - How to define a sustainability objective, vision or desired sustainability outcome, including how to formulate specific sustainability indicators and targets for a

proposed development; the sustainability objectives and targets should be set within the context of existing Presidential Outcome 10 outputs and sub-outputs, the MTSF outcomes, and the recommendations of Environmental Outlook Reports, SEAs and EMFs within the national, provincial and local spheres of government.

- How to ensure that the design of a proposed development is adapted to meet sustainability targets, prior to the identification and evaluation of potential residual impacts.
- How to compile a statement on the sustainability performance of the proposed development before adaptation of the proposal to meet the sustainability targets; and how the desired sustainability vision and objectives are to be achieved considering alternatives and anticipated impacts.
- Principles for reporting (for reports emerging from the application of all the EM tools and not only EIA), rather than tables of contents for each type of report; it may be desirable or necessary to include these reporting requirements in the EIA or other regulations.
- How to incorporate sustainability performance requirements into the conditions of approval attached to Environmental Authorisations, and how to ensure that conditions are clear in terms of the sustainability performance that is required; noting that, if desired sustainability objectives cannot be achieved, environmental authorisation should not be granted.
- How sustainability objectives and targets will be monitored, together with the relevant monitoring criteria and reporting.
- Substantive guidance beyond the provision of minimum requirements for reporting is required for practitioners and others responsible for conducting various IEM processes, applying various environmental management instruments and tools, and reporting on findings; specifically, there should be a requirement to consider and incorporate, in any analysis, the implications of the Constitution, the NFSD and NSSD, as well as framework legislation pertaining to development and environmental planning, from the perspective of sustainable development.

Pillar 5

Legislation, including a list of activities, is the primary mechanism to identify and formalise the adoption of instruments and tools; the list of activities is based on the sensitivity of the receiving environment, limits set for environmental aspects, and the type and scale of activity; the use of EM instruments and tools for non-listed activities is guided by the progression (future framework) for EM instruments and tools and the development planning cycle.

The list of activities is based on the sensitivity of the receiving environment, limits set for environmental thresholds, and the type of activity. EM instruments and tools can also be considered for activities not requiring authorisation. Certain land use processes in local authorities – including for example township establishment, rezoning, council consent applications, site development plan approval and building plans – do require approval. If an activity is not listed, there will still be a local authority responsibility to consider environmental opportunities and constraints in the decision making process.

Pillar 6

Strategic Environmental tools adopted by the Competent Authority identify geographical areas where (a) certain activities may be excluded from the EIA requirement or (b) where EIAs can be downscaled to other EM tools such as specialist assessments, standards, and EMPrs.

Pillar 7

Strategic environmental instruments and tools adopted by the Competent Authority identify specific geographical areas where specific listed activities are prohibited or the granting of environmental authorisation is restricted, in order to (amongst others) prevent loss of important ecosystem functions and services in terms of the pre-determined sustainability objectives, indicators and targets.

Pillar 8

For a selected list of activities the relevant competent authority has the ability and discretion to identify and choose fit for purpose EM tools and instruments based on pre-determined objective criteria and in line with approved/ adopted strategic environmental instruments and tools.

The pillars above relate to screening and the choice between the various EM instruments and tools available. Screening is "*the process of determining whether or not an individual development proposal requires detailed environmental assessment and the level of assessment that should occur*" (DEAT, 2002b: p. 6). Screening usually comprises two important steps, namely, "*whether or*

not a development proposal requires environmental assessment", and if so, the level of the environmental assessment required (DEAT, 2002b: p. 9). In the context of the current IEM system,

> "*environmental considerations are first taken into account either through* mandatory screening*, which is typically administered by an environmental authority … and/or* pre-application screening*, which is typically undertaken at the initiative of a development proponent prior to submitting an application*" (DEAT, 2002b: p. 8).
>
> "*Pre-application screening is the process by which key environmental issues associated with a proposed development are anticipated at the earliest opportunity, and are considered as an integral part of pre-feasibility investigations. … In pre-application screening the initiative for undertaking such a preliminary evaluation is taken by the proponent prior to an instruction by the lead authority."* (DEAT, 2002b: p. 10)
>
> *"Mandatory screening is a process by which the anticipated environmental consequences of a proposed development are considered, prior to the proposal being authorized or rejected, to determine whether an environmental assessment is required, and if so, the level of assessment required.*
>
> *The administration of this form of screening is usually the responsibility of the … authority tasked with the implementation of regulations or guidelines pertaining to environmental assessment*." (DEAT, 2002b: p. 12)

The outcome of screening is then whether a proposed activity does not require further environmental assessment or requires a form of assessment generally specified by the same set of regulations or guidelines that define the requirements for screening.

> "*Typically four categories of classification exist:*
>
> *i. The proposal is expected to result in no significant environmental impacts and further environmental assessment is not required, with the assumption that there will be adherence to accepted environmental standards.*
> *ii. Certain environmental aspects of the proposal (including mitigation options) are unclear and an environmental assessment, undertaken according to a specified process, is required; the complexity of such an assessment will depend on the circumstances that are pertinent to the proposed development.*
> *iii. The proposal will definitely give rise to significant impacts and will automatically require a comprehensive environmental assessment.*

iv. *The proposal is rejected on the basis of the significant environmental impacts which exceed the defined thresholds of concern and which cannot be mitigated."* (DEA, 2002b: p. 13)

In South Africa a list-based screening approach has been in effect since 1998.

> *"Project or activity lists are used in screening to specify developments that automatically require environmental assessment. This approach directs the process towards the environmental assessment of only those developments that are classified as having the potential to result in significant environmental impacts. In so doing, the number of applications for environmental authorisation is reduced and the load on institutions responsible for the administration of the authorisation process is eased accordingly."* (DEA, 2002b: p. 14)

An approach to screening that complements listed activities is where the location of a proposed development in a listed environment triggers the requirement for environmental assessment.

> *"Listed environments could include national parks, wetlands, biodiversity hot spots including areas supporting rare and endangered species, threatened habitats, areas particularly sensitive to the effects of habitat fragmentation, and environments highly valued for the environmental services they deliver".* (DEA, 2002b: p. 14)

The 2010 EIA Regulations, Listing Notice 3 provides for such a refinement where environmental authorisation is required prior to commencement of activities in specific identified geographical areas only.

The above list-based approaches to screening may also be informed by specified environmental thresholds, which, if not exceeded, could result in exemption from the requirement for environmental assessment of a particular proposal. These thresholds might, for example, relate to some specified limit in the size of a development, demand for environmental resources (e.g. water), atmospheric emissions or the number of people potentially affected.

The use of prohibition lists is a third list-based approach to screening according to which there is an automatic prohibition of projects. No such prohibition list exists in South Africa. Even where there are sensitive environments, the regulatory requirement is only for an assessment; there is, as yet, no development/activity prohibition in such sensitive areas.

A list based approach for screening is still supported within this Strategy. However, two major problems hamper the effectiveness and efficiency of the current list namely:

- the list is still too comprehensive even after the 2010 amendments; activities are still triggered where impacts are known and can be anticipated, and mitigation can take place successfully via other mechanisms such as defined norms and/or standards; and
- EIA is currently the only compulsory tool and, as previously discussed, EIA is not always necessarily 'fit for purpose'.

The key recommendations that are made in response to the above are listed below.

Three lists of activities are proposed, namely:

- **List 1**: Activities that will always require a full EIA and an authorization based on the potential of such activities to have a significant impact on the environment. These activities would include for example, mining, nuclear facilities, airports, bulk distribution of dangerous goods, industries releasing emissions, pollution or effluent, and new infrastructure traversing various sensitive environments or regions. The EIA will have to be based on the full life cycle of such activities, to deal with potential legacy issues (note that this is especially true of mining but would apply to all such activities). Significance should be determined on an objective or scientific basis and adequate criteria and guidance should be provided for the determination.
- **List 2**: Activities that will require an environmental authorization based on the possibility that such activities will have an environmental impact. In this case, however, the decision on whether to allow the activity to proceed or not will be based on the use of a fit for purpose instrument or tool which could be specified at the discretion of the CA. These fit for purpose instruments or tools could include EIA, BA, LCA, specialist assessments or others.
- **List 3:** Activities where impacts are known and can be mitigated subject to implementation of certain norms/standards/conditions. In this case no form of assessment is required because no decision is required. There would, however, be an obligation on compliance and enforcement functions to ensure that where such activities have in fact occurred that they have occurred in compliance with the norms and standards. Although no decision is required, activities on this third list could require notification by the proponent to the CA. In local authorities the norms/standards/conditions could be published as a by-law in which case approval would occur through site development plans and building plans. The local authority would need to show relevant capacity and skills to monitor and enforce the norms/standards/conditions but the CA would still retain a mandate to monitor and enforce, where there is a lack of compliance.

In addition, strategic instruments or tools could be used by the CA to identify specific geographical areas where certain listed activities could be excluded from the need for environmental authorization. Equally, such instruments or tools could also be used to demarcate areas where no activities can be allowed, or at least to restrict activities. The prohibition or restriction of activities would be driven for example, by the need to avoid loss of important ecosystem functions (as a function of the pre-determined sustainability objectives and indicators) and ecosystem services.

For the selected list of activities where the relevant competent authority has the ability and discretion to identify and choose fit for purpose EM tools and instruments, objective criteria need to be developed for instrument and tool selection. The following criteria should be considered:

- Fitness in terms of the progression (in the future framework) of the environmental instruments and tools as proposed in Pillar 1 of this building platform.
- Fitness in terms of existing strategic environmental instruments and tools, strategic context and available information on the receiving environment. Existing strategic environmental instruments such as SEAs, EMFs, Conservation Plans, Bioregional plans, proclaimed protected areas, areas with sensitive or threatened receiving environments or areas necessary for ecosystem service rendering should direct the selection of appropriate tools.
- Fitness in terms of the management phase or phases of IEM, as discussed in Building Platform 3. Certain tools are more appropriate or fit in answering the questions related to a certain management phase or phases.
- Fitness of use in terms of:
    - the correct information to make an informed decision (what is known and unknown);
    - the required information at the right scale and level of detail;
    - the information on weaknesses identified in terms of available information;
    - the available capacity to implement a tool; and
    - the affected parties and the scope and extent of public participation needed.

The different lists of activities provide a *de facto* screening mechanism to identify activities that are anticipated to impact on the environment. In practice there are activities which the local authority will authorise, which do not appear on these lists and yet might have a significant impact on the environment. Local authorities should make use of the range of tools and instruments offered by IEM to manage these local impacts in a responsible and proactive manner. These activities may arise from land use changes via township establishment, rezoning, consent use, site development plans, or building plan approval. The focus should be on sustainable development which the local authority manages appropriately.

Actions identified:

- Refine existing list of activities and resolve into 3 separate lists as described above;
- Refine pre-determined criteria to be considered when discretion is allowed for the CA to make a choice between fit for purpose tools; provision should be made for the selection of tools for environmental assessment or methods to be used within particular assessment.
- Develop a screening process for non-listed activities, which occur in the land use decision making procedures of local authorities.

- Develop country wide Environmental Outlook Reports, SEAs and EMFs for SDFs and sector specific SEAs, as required in terms of **Error! Reference source not found.** and this building platform, reinforcing the list of activities by the identification of:
  - Specific geographical areas where specific listed activities may be excluded from environmental authorisation (already allowed for in NEMA) or specific geographical areas, where EIAs can be downscaled to other EM tools such as a BA, specialist assessments, standards, and EMPs.
  - Specific geographical areas where specific listed activities are prohibited or the granting of environmental authorisation is restricted in order to (amongst others) prevent the loss of important ecosystem functions in terms of the pre-determined sustainability criteria/indicators. This will imply restricted areas where certain activities cannot be authorized.

Pillar 9

All government departments provide practical information on the State of the Environment and produce Environmental Outlook Reports, making provision for this activity within their Environmental Implementation Plans (EIPs) and Environmental Management Plans (EMPs); the framework for such information provision is provided by DEA and rests on the intents of the NSSD, NDP, Presidential Outcome 10, MTSF and the pre-determined sustainability objectives, indicators and targets.

Requirements of other government departments in terms of SOER and Environmental Outlook reporting must be guided by the NDP, NSSD, MTSF, Outcome 10 and the country's commitment to sustainable development. The requirements related to sustainable development set out in the National Spatial Development Framework (NSDF), the National Development Plan (NDP), MTSF and the 12 Presidential Outcomes should also be considered when outlining the requirements for SOER and defining the desired state of environment in terms of sustainability objectives, indicators and targets.

A sustainability-led system for environmental assessment and management in South Africa requires a broad vision of the desired state of the environment – an Environmental Outlook – which should guide the application of not only environmental management instruments and tools, but also development planning. Without such a vision, development planning and especially environmental assessment and management occur in a contextual vacuum and cannot therefore contribute to moving towards sustainability, however much it is diligently applied in the service of avoiding and mitigating impacts. As outlined above, this Strategy must therefore contain a clear interpretation and presentation of the expectations of IEM practice with regard to delivering sustainability. This coherence between policy level provisions through to strategic planning and implementation, and

further to the level of individual development projects, lies at the heart of the intention of a sustainability-led IEM System.

It is also recommended that relevant authorities (particularly provincial environmental departments) should maintain a central repository of spatial data and of environmental assessment and management reports. The spatial database should include all government spatial frameworks and plans relevant to development decision making and be accessible to registered EAPs. Appropriate knowledge and information systems are provided for in Building Platform 6.

Actions identified

- Use a consistent approach in State of Environment and Outlook reports, EIPs, EMPs and others. The use of key indicators that can be updated on an on-going basis to determine trends, threats to levels of acceptable change and so forth should be encouraged.
- Ensure that the instruments and tools listed above are properly endorsed and formalised so that they can be used directly in other environmental assessment and management instruments and tools.

5. Building Platform 5

Environmental practitioners and specialists are professional, ethical, objective and independent.

Building Platform 5 addresses Root Cause 5: Lack of confidence in environmental professionals.

The Ten Year Review of EIA (in 2008) indicated general consensus[5] that professional registration of environmental practitioners will greatly improve the quality of EIAs. There is frustration with the conduct of some practitioners and, particularly for the public, the difficulty of drawing attention to problems and having these addressed in the EIA process. Unprofessional conduct by some practitioners has tainted the industry and caused mistrust.

The Strategy requires that specialists and environmental practitioners, including officials, are professional, ethical, objective and independent.

Pillars for Building Platform 5

Pillar 1: A statutory Council for Environmental Professionals is constituted, with sub-bodies – professional associations – representing the various disciplines (e.g. EAPASA); all environmental professionals are registered by the Council and belong to the appropriate association(s).

Pillar 2: A classification and categorisation system for environmental professionals has been developed; all professional functions within IEM processes are implemented by appropriately qualified and competent registered practitioners and specialists.

Pillar 3: Regulatory instruments such as codes of conduct, disciplinary procedures and codes of ethics are ensured by the statutory council and professional associations.

Pillar 4: Continuing Professional Development (CPD) forms part of the requirements for continued registration with the statutory council and the relevant professional association(s).

Pillar 5: The various professional associations liaise with institutions of higher learning to align curricula, as well as accredited training courses, to IEM systems and processes, and to accredit programmes to the exit level outcomes of registered national qualifications.

Pillar 6: The various professional associations have internship systems for students in training and candidate practitioners, which enables them to gain practical experience and

[5] In the Review of Effectiveness and Efficiency of EIA in South Africa survey only 2% of respondents disagreed that professional registration would increase the quality of EIA.

skills that assist them to find work and enhance their ability to register as environmental professionals.

Pillar 7: Environmental professionals and government officials in all spheres of government tasked with environmental management receive relevant training; such training allows for some level of delegation/mandating of decision making authority where appropriate.

Pillar 8: A robust mechanism for peer review has been developed and implemented in support of professionalism, objectivity and independence.

Pillar 9: A professional association for Public Participation Practitioners is established under the Council for Environmental Professionals.

Pillar 1

A statutory Council for Environmental Professionals is constituted, with sub-bodies – professional associations – representing the various disciplines (e.g. EAPASA); all environmental professionals are registered by the Council and belong to the appropriate association(s).

Professionalism within the environmental sector needs to be assured as a priority. Professionalism implies appropriate training, technical competence, experience which is relevant and adequate, independence, objectivity (with regard to knowledge), impartiality (with respect to decision making), and ethical behaviour.

The establishment of the Environmental Assessment Practitioners Association of South Africa (EAPASA) is a step in this direction, but EAPASA is not a statutory council and does not include all related environmental disciplines or professions.

NEMA provides for the Minister to appoint a registration authority, or such number of associations as are required for the purpose of the Act and may, if circumstances require, limit the number of registration authorities to a single registration authority, for instance, a council with separate associations attached to it.

The development of a code of conduct for the sector, and a formal commitment to that code by practitioners, is deemed crucial to bolster confidence in environmental practitioners.

In order to ensure objectivity (of knowledge and predictions) and impartiality (of decisions) in the work of the practitioner, the current EIA regime has focused on the regulatory requirement for the independence of an Environmental Assessment Practitioner (EAP) from the developer and his or her planning and design team. The independence requirement also includes independence of the EAP from the sub-consultant specialists such as zoologist, botanist, freshwater ecologist, town planner and engineer.

Whilst the independence requirement is rightly focused on ensuring that there is no conflict of interest for EAPs with regard to personal financial gain from the implementation of a development, that is, over and above payment for professional services rendered; the emphasis on this one aspect of professional conduct has failed to address wider concerns. These concerns include poor quality of work; restricted opportunities for interdisciplinary cooperation in the formulation of development proposals, resulting in separated rather than integrated planning; unprofessional conduct; and ultimately, the failure to adequately implement the principles of NEMA.

Nonsensically, the independence requirement for EAPs and environmental specialists militates against an active role for environmental practitioners in the processes of project planning and design. Environmental practitioners are often involved too late in the process, and are kept at arms-length from the built environment professionals, so that numerous decisions are taken by the developer and his or her design team in the absence of an interdisciplinary team that includes environmental experts. Ideally environmental practitioners should ensure that development planning is sustainability-led, through involvement in the formulation or co-design, and evaluation, of alternatives; in refining site layouts according to environmental opportunities and constraints; and in the choice of 'green' technology.

The independence requirement also does not address professionalism and quality assurance in the realm of strategic environmental planning, and in optimising the roles of public participation specialists and environmental control officers.

Environmental practitioners within organisations (internal EAPs) should focus on planning/design of the organisation's strategic direction and projects. However, it is still a requirement that an external EAP conducts the EIA to ensure independence

Actions identified

- Establish a statutory Council for Environmental Professionals with the necessary facilitative requirements including a dedicated act of Parliament with associated legislative stipulations, agreements with other professional councils, training requirements, registration requirements, a code of ethics and other actions identified in this platform.
- Develop and roll-out a communication plan focussing on creating widespread public awareness of the register of EAPs, and registers of other practitioners as envisaged in Pillar 2, once such registers are operational.
- Review the independence requirement for EAPs working in a staff function (or advisory) capacity in organisations responsible for development, and between EAPs and the experts they appoint to undertake specialist studies, to promote the formation of interdisciplinary teams tasked with the formulation of development proposals informed by environmental considerations as early as possible in the planning process.

Pillar 2

A classification and categorisation system for environmental professionals has been developed; all professional functions within IEM processes are implemented by appropriately qualified and competent registered practitioners and specialists.

Environmental practitioners need to be classified and categorised according to skills and experience, respectively. This measure is proposed to assure professionalism in the environmental sector, and support the appointment of practitioners with appropriate skills and experience.

Categorisation allows for different levels of practitioners, for instance, a candidate practitioner, a registered professional, and possibly a master practitioner. Categorisation is proposed as a means to assign a specific level of competence, skill and experience to different complexities and scales within the environmental assessment and management of policies, plans, programmes and projects. The proposal is intended to guide the appointment of an EAP, allay concerns of I&APs about competence, and set expectations of EAPs appropriately with respect to the projects they should accept.

Classification can be extended beyond Environmental Assessment Practitioners to include Public Participation Practitioners, Environmental Control Officers, Social Impact Assessment Practitioners, and other environmental professionals such as Heritage Practitioners and Environmental Planning Practitioners. A classification for the environmental monitoring inspectorate (EMI/Green Scorpions) can also be considered.

The following classification and categorisation is proposed for the IEM Sector, where classification relates to different competencies and skills; and categorisation relates to the progression of a practitioner from their tertiary studies, through to registering and acting as a Candidate practitioner working under the mentorship of a Registered professional, and possibly beyond that to being recognised as a Master practitioner. Whilst the description of categories below currently applies primarily to Environmental Assessment Practitioners, this is a reflection of the current progress towards registration of EAPs, and the principles – if not the detail – can be more broadly applied to other practitioners working in the IEM sector in future.

The following classification and categorisation is proposed for the IEM Sector:

CLASSIFICATION					
	EAP Environmental Assessment Practitioner	PPP Public Participation Practitioner	ECO Environmental Control Officer	SIA Practitioner Social Impact Assessment Practitioner	Other Environmental Professionals
CATEGORIES	CANDIDATE A person who has the required formal qualification, the National Certificate: Environmental Assessment Practice, and meets some, but not all, of the criteria related to the nature and length of professional experience necessary for registration as an EAP				
	REGISTERED PROFESSIONAL A Registered Professional has the National Certificate: Environmental Assessment Practice; has completed a number of years of further relevant and applicable working experience; and demonstrates the required level of experience and competence in the context of a particular Environmental Assessment according to for the various Exit Level Outcomes of the national qualification.				
	MASTER A Professional would only be eligible to apply to become a Master after 8 years of experience. (e.g. EAP, Public Participation Practitioner and SIA Practitioner applicable work experience must be on EIAs and not Basic Assessments.)				

TABLE 3: PROPOSED CLASSIFICATION AND CATEGORISATION OF THE IEM SECTOR

Throughout all the Associations it is intended that there be classification for candidate, registered and then possibly a master practitioner. The structure discussed here - with the exception of the category of Master practitioner - is that of the Environmental Assessment Practitioners Association of South Africa (EAPASA).

CANDIDATE EAP

According to the Environmental Assessment Practitioners Association of South Africa (EAPASA) (2012), a person will be able to register with EAPASA as a Candidate EAP in future if they have an Honours level qualification (Level 8 on the National Qualifications Framework) that has been accredited by the Council on Higher Education (CHE) through its permanent committee that deals with the accreditation of programmes, the Higher Education Quality Committee (HEQC), against a set of criteria for programme accreditation outlined by the HEQC, and that meets the exit level outcomes of the national qualification 'National Certificate: Environmental Assessment Practice', which is registered with the South African Qualifications Authority (SAQA) as Qualification ID 61831.

Until such time as the above-mentioned qualification has been rolled out nationwide in universities, the Certification Committee of EAPASA will be receiving and evaluating applications for registration as an EAP on the basis of a person's qualification(s) and a Recognition of Prior Learning assessment.

It is understood that a Candidate EAP has little or no practical experience. In its constitution, signed by the Board on 22 February 2012, EAPASA (2012: p. 30) defines a candidate EAP as follows:

> **"*Candidate Environmental Assessment Practitioner (Candidate EAP):*** *This category of registration is for EAPs who have the required formal qualification, the National Certificate: Environmental Assessment Practice, and meet some, but not all, of the criteria related to the nature and length of professional experience necessary for registration as an EAP. These Candidate EAPs are qualified to undertake work associated with, or contributing to, environmental assessment on projects, provided that such work is supervised, reviewed, and 'signed off' by [a Registered EAP, that is,] a REAP, who would take responsibility for work carried out by a Candidate EAP. Candidate EAPs must adhere to the Code of Ethical Conduct and Practice applicable to all registered practitioners*."

REGISTERED EAP

The Environmental Assessment Practitioners Association of South Africa (EAPASA) has applied to the South African Qualifications Authority (SAQA) to register the professional designation of 'Registered Environmental Assessment Practitioner' (REAP). In future, once SAQA has registered this designation, EAPs registered by EAPASA will be able to use this professional designation as an indication of their professional status.

EAPASA's constitution describes the nature and length of professional experience necessary for registration as an EAP.

The minimum requirements for appropriate professional experience in the field of environmental practice must demonstrate competence in the required areas, as follows (EAPASA, 2012: p. 31-32):

> "*a) A minimum of three years appropriate professional experience; and*
>
> *b) A minimum of three Environmental Assessments (EAs) or Reviews, at an appropriate scale, conducted in that time in which the applicant has held primary responsibility for the conduct or review of the EAs and which demonstrate the required level of competence given the context of the EAs in each of the Exit Level Outcomes (ELO) listed below and, as relevant, adequately meet the criteria specified for each of these in the National Certificate: Environmental Assessment Practice:*
>
> *ELO 1: Demonstrate a conceptual understanding of the environment; sustainable development; environmental assessment; and, integrated environmental management.*
>
> *ELO 2: Demonstrate the ability to think holistically, systemically, systematically, spatially and in an integrative manner and to discern what is relevant to decision making.*
>
> *ELO 3: Identify and apply environmental assessment and management procedures and methods.*
>
> *ELO 4: Review and monitor environmental assessment procedures and methods.*
>
> *ELO 5: Conduct applied research activities in a specific context. (Note: An EAP is not required to conduct specialist studies).*
>
> *ELO 6: Meet specific communication requirements at all levels through environmental reporting processes and stakeholder engagement*."

MASTER EAP

Although not currently contemplated by EAPASA, this Strategy suggests that a professional REAP should be able to apply to become a Master EAP after 8 years of experience. A classification of Master EAP will designate the appropriate experience for complex or high risk activities, such as in the case of nuclear projects or fracking.

The relationship between the proposed Council for Environmental Professionals, existing and new professional associations is shown in Table 4.

COUNCIL FOR ENVIRONMENTAL PROFESSIONALS				
The Council co-ordinates, ensures uniformity within policy areas and does collective bargaining where appropriate				
EAPASA Dealing specifically with EAPs	Association for Public Participation Practitioners	Association for Social Impact Assessors	Association for Environmental Control Officers	Associations for other Environmental Professionals e.g. Heritage, Environmental Planning
Each Professional Association and their attendant Board, constituted under the auspices of the Council, will have its own Constitution, Rule Book, requirements for CPD, etc., but is in line with the policies of the Council.				

TABLE 4: THE RELATIONSHIP BETWEEN THE COUNCIL FOR ENVIRONMENTAL PROFESSIONALS AND THE PROFESSIONAL ASSOCIATIONS

The various professional associations should develop the requirements for the categorisation of different levels of experience, as a combination of the duration – in number of years – of practice and the number, scale, and quality of the assignments undertaken. There should also be accommodation for the differing experience of reviewers and assessors.

The qualifications, skills and experience of the Public Participation Practitioner should be defined, taking cognizance that this professional's skills will be required in contentious, complex projects or areas of greater environmental sensitivity. The requirements should include that the practitioner is able to manage conflict, build consensus, ensure technical information is relayed correctly but simply, and typically accommodate the needs and perspectives of a wide cross-section of society.

The qualifications, skills and experience of Environmental Control Officers should be defined, acknowledging the need for some understanding of engineering processes and the contractual relationships between the various players in the construction industry.

Practitioners involved in Environmental Planning should require experience as Environmental Assessment Practitioners, and should have skills in GIS, modelling, analysis, spatial planning, research, data collection and public participation.

Environmental monitoring inspectors require experience, qualifications, and skills in the identification of contraventions or illegal activities; an understanding of monitoring and enforcement of EA conditions; litigation; law enforcement; command and control; search and seizure; arrests; surveillance and evidence collection.

Actions identified

- Provide a requirement in law, in an act of Parliament to establish the Council for Environmental Professionals, which stipulates that all professional functions within IEM processes are only to be implemented by appropriately qualified and competent registered practitioners and specialists.
- Develop a classification and categorisation system for a range of practitioners and specialists, under the auspices of and according to the structures of the Council for Environmental Professionals.
- Codify the relationships between the Council and the subsidiary environmental professional associations and their attendant boards, and between the Council and the associations for a range of other professions, such as those involved in the provision and maintenance of the built environment.

Pillar 3

Regulatory instruments such as codes of conduct, disciplinary procedures and codes of ethics are ensured by the statutory council and professional associations.

All environmental practitioners will need to be registered by the professional Council and the relevant professional association in order to practice as a registered environmental practitioner within a specific category.

Codes of conduct and a code of ethics must be developed and all professionals should make a formal commitment to these codes.

A disciplinary procedure needs to be established, including a formal complaints system overseen by the Council, where complaints are investigated in an enquiry, and negative rulings result in suspension or cancellation of registration to operate as a practitioner.6

For example, the disciplinary committee of EAPASA (2012: p. 45-46) can, in respect of each contravention:

> "*(i) exonerate the member;*
> *(ii) reprimand the member;*
> *(iii) suspend the member from the Association for a specified period (but not exceeding the maximum number of days for such suspensions as determined by the Board from time to time); or*
> *(iv) expel the member from the Association; and,*
> *in all such cases, the disciplinary committee may fine the member; such fine will be the amount determined by the disciplinary committee, which fine will not exceed the maximum amount for such fines as may be determined by the Board from time to time*."

A person under investigation or who has been suspended or expelled by the proposed Council will not be eligible to apply for a higher category until such time as the enquiry is complete and the suspension period has ended. A practitioner must be required to disclose that he/she is under investigation or has been suspended or expelled.

Disciplinary enquiries or hearings will be dealt with in accordance with the general rules and Code of Conduct of the Council for Environmental Professionals and the specific rules and Code of Conduct of the professional association to which the accused practitioner belongs.

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[6] Also proposed at the Parliamentary hearing 30 July 2013 on the efficacy of SA's EIA regime

Actions identified

- Develop a code of conduct (or Rule Book), which includes a code of ethics, to be upheld by all professionals registered with the Council for Environmental Professionals; this code of conduct can be supplemented by a subsidiary code for each of the professional associations.
- Establish a formal complaints register for reporting contraventions of the constitution and code of conduct of the Council for Environmental Professionals and the relevant professional association.
- Develop a formal disciplinary procedure for dealing with reported contraventions, which makes provision for a disciplinary enquiry either by the Council for Environmental Professionals or the relevant professional association.

Pillar 4

Continuing Professional Development (CPD) forms part of the requirements for continued registration with the statutory council and the relevant professional association(s).

Continuing Professional Development (CPD) implies a constant cycle for improving the knowledge of all registered professionals.

The environmental professions are continually evolving in parallel with the development of knowledge and skills, and this requires that professionals need to keep up-to-date, particularly with regard to emerging international trends. The continual cycle for knowledge improvement also links with the IEM cycle as discussed in Building Platform 3, where it is accepted that monitoring of the existing IEM system and processes will lead to adaptive management, improvements to systems and processes, and the development of new instruments and tools.

The identified objectives of this Strategy will result in a need for additional capacity in areas such as the sustainability-led approach and the integration of strategic environmental planning into land use planning and SDFs. Continuing Professional Development on new IEM systems, processes and legislation is thus a necessity.

Appropriate Continuing Professional Development is required for maintaining current registration within each category and/or progression towards the next level. For instance, the Environmental Assessment Practitioners Association of South Africa envisages that REAPs will have to apply for re-registration every five years, with a requirement to submit a CPD report in support of such reregistration (EAPASA, 2012). The various professional associations registered with the Council for Environmental Professionals should each develop CPD guidelines which provide information on a list of desired CPD activities, in each of a range of categories; the associated points that are scored for having engaged in such activities; and the total number of points that need to be accrued over a specified time period to maintain registration. The CPD guidelines should thus indicate a weighting of how many CPD points are attached to a range of CPD activities, such as mentoring candidate practitioners, attending conferences and short courses, and undertaking voluntary work in support of environmental conservation bodies, non-governmental or community-based organisations.

Actions identified

- Develop and implement a Continuing Professional Development (CPD) learning programme within each professional association, with guidelines on desired CPD activities in each of a range of categories, the associated system of points that are scored for having engaged in such activities, and the total number of points that need to be accrued over a specified time period to retain registration.

Pillar 5

The various professional associations liaise with institutions of higher learning to align curricula, as well as accredited training courses, to IEM systems and processes, and to accredit programmes to the exit level outcomes of registered national qualifications.

Institutions of higher learning have to deliver capacitated, skilled, knowledgeable and professional individuals to the environmental sector. The success and quality of the IEM system relies on the educational institutions, who are also well equipped to develop relevant Continuing Professional Development courses.

Institutions of higher learning should align their programmes, and associated curricula, with the evolving IEM systems and processes. The various professional associations should liaise with these institutions to encourage them to seek accreditation for their programmes, where appropriate, from the Council on Higher Education (CHE). The CHE has a permanent committee for the accreditation of programmes, the Higher Education Quality Committee (HEQC): this committee uses a set of criteria outlined in the CHE HEQC document 'Criteria for Programme Accreditation'. In accrediting programmes, the HEQC is prepared to work in conjunction with a professional association to ensure that such programmes also meet the exit level outcomes of national qualifications developed for a particular profession. An example of such a qualification is the 'National Certificate: Environmental Assessment Practice', which is registered with the South African Qualifications Authority (SAQA) as Qualification ID 61831, although no programmes have yet been formally accredited against this qualification.

To ensure the integration of sustainability issues into other disciplines such as planning, landscape architecture, architecture and engineering, the relevant curricula of the other disciplines should also be reviewed and updated.

A further possibility being pursued by the Environmental Assessment Practitioners Association of South Africa (EAPASA, 2013) is that built environment programmes – such as Masters in City and Regional Planning, Masters in Landscape Architecture, or a four year Civil Engineering degree – can seek accreditation as meeting the requirements of the national EA qualification. It will be up to individual institutions to choose whether they wish to provide the EAP path to their students alongside other professional built-environment paths. So for instance, a programme in Landscape Architecture that obtains accreditation for meeting the exit level outcomes of the national EA qualification, opens up the possibility of a choice of career paths for their graduates, some of whom may choose the EAP path, others the Landscape Architecture path, while some may choose to register ultimately for both professions.

Actions identified

- Develop educational curricula and programmes that are consistent with the evolving IEM systems and processes, through cooperation between institutions of higher learning, competent authorities and professional associations.
- Ensure that changes are introduced to educational curricula for professionals, to advance a sustainability-led approach to environmental planning and management, within the programmes for environmental professionals as well as those for other professions such as town and regional planning, landscape architecture, architecture and engineering.
- Motivate and support the adoption, by institutions of higher learning, of the National Certificate: Environmental Assessment Practice (Qualification ID 61831) in programmes catering for environmental and built-environment professions.

Pillar 6

The various professional associations have internship systems for students in training and candidate practitioners, which enables them to gain practical experience and skills that assist them to find work and enhance their ability to register as environmental professionals.

Internships are a well-used mechanism in professional registration systems for other professions and should be adopted by the various professional associations for the environmental sector in South Africa. The proposed categorisation and classification system for environmental professionals will benefit from a system of internships.

Actions identified

- Establish a system of internships for students and candidate practitioners as a priority action for EAPASA and other professional associations.
- Promote the system of internships once the Council of Environmental Professionals has been established.

Pillar 7

Environmental professionals and government officials in all spheres of government tasked with environmental management receive relevant training; such training allows for some level of delegation/mandating of decision making authority where appropriate.

This pillar relates closely to Pillar 5 (relevant and appropriate curricula by educational institutions), Pillar 1 (registration requirement in terms of the proposed Council of Environmental Professionals) and Pillar 4 (continuing professional development). The need for skills development links closely with Building Platforms 1 and 2 requiring that NEMA principles should be integrated into other sectoral plans.

Consultant practitioners, government officials and stakeholders should have a clear understanding of the purpose of IEM, its systems, processes and terminology. A good grasp of how the various EM tools relate to each other and the development planning process is also needed.

Environmental practitioners work in a multi-disciplinary workplace, and they are required to interpret and collate various datasets and information – from a wide variety of sources – into a report, and provide a reasoned opinion as to whether an activity should or should not be authorised and any conditions of approval that should be stipulated. The level of complexity, scope and scale of assessment should govern the level of expertise that is to be expected of a practitioner in all stages and functions.

The Competent Authority is mandated to consider the level of expertise of the practitioner. There should be no disparity between the level of expertise of the practitioner compiling the report and making the recommendations; the practitioner reviewing the report, and the practitioner evaluating the report and making decisions. All practitioners need to demonstrate substantive knowledge (training), skills and competence (experience) and ethics (values) relevant to the level of complexity, scope and scale of an activity.

In the sphere of local government, guiding principles need to be developed for the type and level of skills required for effective decision making by Local Authorities when integrating environmental issues into strategic planning and land use decisions. The guiding principles should include knowledge of the processes involved in the:

- Integration of strategic environmental and strategic land use planning (EMF/SEA to influence SDF and IDP); and
- Evaluation of applicable listed activities and the inclusion of environmental issues into land use decision making.

An environmental sector skills plan (ESSP) was developed for the wider environmental sector[7]. The plan addressed the environmental focus areas of (DEA, 2010a: p.6):

> *"Air Quality, Waste and Chemicals Management, Pollution Incident Management, Environmental Impact Management, Conservation and Sustainable Use of Biodiversity, Marine and Coastal Management as well as Cross-cutting support functions: Environmental Law and Compliance, Environmental Education, Training and Community Empowerment."*

The ESSP excludes water related matters, since the Department of Water Affairs (DWA) has undertaken a similar study to establish the skills development needs in the Water Sector.

Significantly the environmental sector skills plan stated the principle that skills must align with the expertise (knowledge, values and skills) needed to fulfil the environmental mandates.

Priority skills development programmes identified by the environmental sector skills plan include (DEA, 2010a: p. 22):

> *"- Environmental law and policy*
> *- Integrative skills programmes*
> *- Mentoring and coaching*
> *- ICT skills programmes, including the use and interpretation of GIS and modelling technologies*
> *- Sustainable development planning*
> *- Monitoring, modelling and evaluation of environmental change*
> *- Green procurement and green economy planning skills*
> *- Environmental ethics and social justice practices in the environmental sector".*

The skills plan also identified a set of specialist skills that are needed to move towards a sustainability path and sustainable development, as shown graphically in Figure 8.

[7] The wider environmental sector includes public, private, parastatals, academic and research institutions and 'Not for profit' organisations

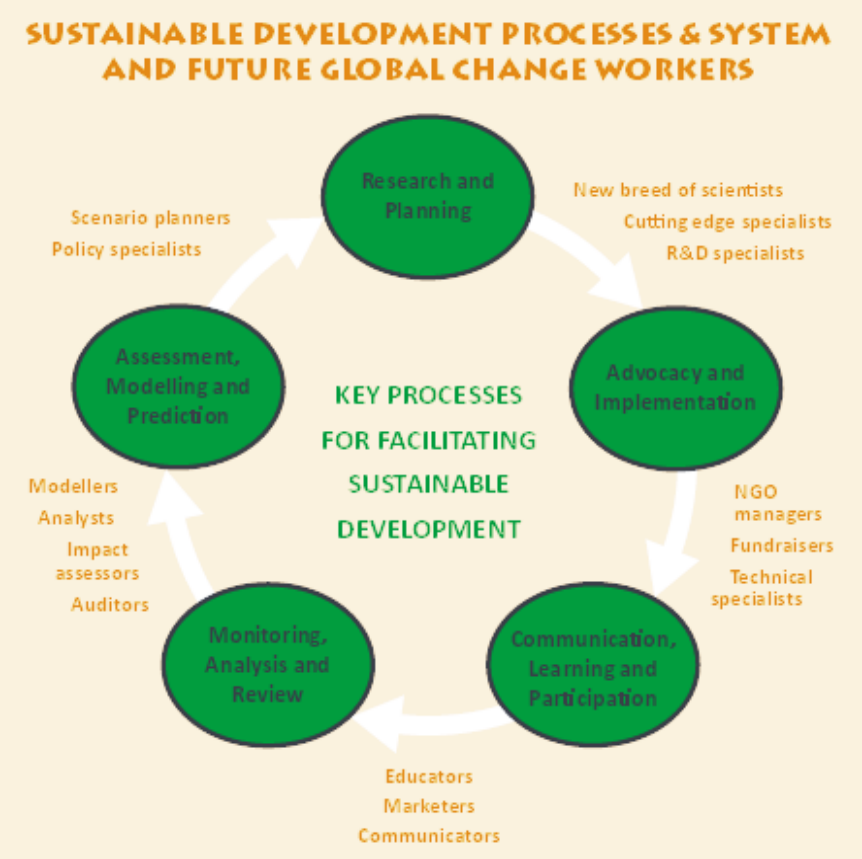

FIGURE 8: SUSTAINABLE DEVELOPMENT PROCESSES AND SYSTEM

The Department of Environmental Affairs, together with the National Environmental Skills Planning Forum, developed an enabling document aimed at integrating the environmental driver into other Sector Skills Plans. The environmental driver refers to the influence of environmental factors on the total skills development landscape inclusive of other sectors (DEA, 2010b). This policy shift is reflected in government's Medium Term Strategic Framework (MTSF) of the National Development Plan (NDP), specifically Objective 10, which focuses on the sustainable use of natural resources.

Many sectors have environmental compliance obligations, demanding the integration of environmental aspects into all policy formulation, as well as human capital development.

Environmental practitioners will be required to extend their competency into all phases of management, as discussed in Building Platform 4, and in line with proposals throughout this Strategy (See Figure 9).

Training should be in line with proposals from this Strategy, which has identified additional needs for capacity building as follows:

- NEMA principles;
- sustainability-led approach and sustainability thinking;
- setting of biodiversity targets;
- reporting within EM instruments and tools based on a sustainability-led approach;
- biodiversity off-sets;
- EMF/SEA and SDF integration,[8] the general integration of environmental issues into land use planning, and the identification of land uses that may have a substantial impact on the environment;
- integrated decision making within all relevant departments and spheres of government;
- the development of sector EIPs and EMPs as required by Chapter 3 of NEMA; [9]
- the various cooperation mechanisms that are available (both legislated and voluntary), including the advantages and disadvantages of each and criteria for success;
- IEM purpose, systems, processes and terminology, including how the various EM instruments and tools relate to each other and the development planning process;
- choice of 'fit for purpose' instruments/tools/methods within the progression of instruments and tools and in the phases of the management cycle; [10]
- application of new and improved EA tools and the use of all EA&M tools; and
- enforcement of environmental conditions of approval.

Other general aspects which need attention and skills include:

- Enhancing responsiveness to a changing global environment;
- Attracting and retaining skills in the environmental sector;
- Ensuring career development planning;
- Promoting Continuing Professional Development;
- Promoting knowledge transfer and learning;
- Promoting inter-disciplinarity; and
- Increasing the amount of attention devoted to monitoring and enforcement.

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[8] Relevant capacity building and training within provincial and local planning and environmental departments on strategic tools, environmental and planning tools; a national capacity building programme is implemented around the formulation of EMFs and their specific inclusion into SDFs as well as the compilation of SEAs.

[9] Attention should be given to building environmental capacity, within each department, to formulate such plans.

[10] This should include training in GIS and other identified information systems (as per Building Platform 6) in order to identify 'fit for purpose' tools based on available information and on areas identified in EMFs and SEAs for exclusion of environmental authorisation or where certain activities are prohibited.

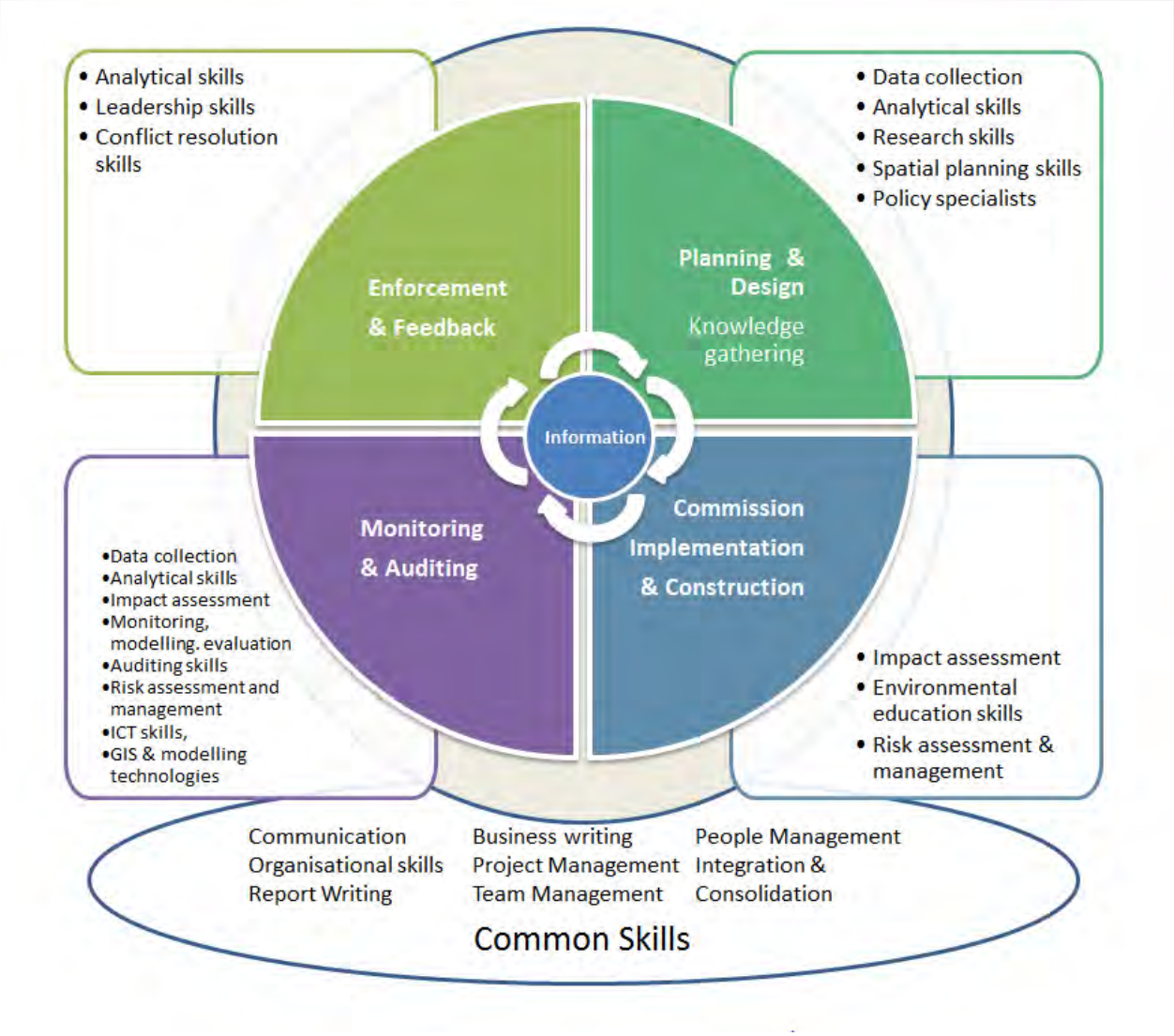

FIGURE 9: SKILLS REQUIRED IN ALL PHASES OF IEM

Actions identified

- Align skills development programmes for environmental practitioners - delineated to include those in the private and NGO sectors, academics, and officials in all spheres of government - with the recommendations in this Strategy as detailed above and in line with the actions identified in Building Platform 7.
- Develop the necessary training material and implement a range of training programmes.
- Establish a new environmental Sector Education and Training Authority (SETA) (recommended) or incorporate environmental training under one of the existing SETAs (e.g. the Energy and Water SETA); this action should be undertaken by the Council for Environmental Professionals or be initiated in the interim, until the Council is in place, by EAPASA.

Pillar 8

A robust mechanism for peer review has been developed and implemented in support of professionalism, objectivity and independence.

The strategy proposes that peer review could be one of the mechanisms to implement and monitor for acceptable levels of professionalism, objectivity, quality and independence in the sector.

Peer review is intended to be a mechanism for constant improvement of practice, and should not be to sole mechanism to ensure professionalism. This would lead to over-reliance on peer review.

The practice of peer review is an evaluation of work by one or more people of similar or better competence to the producers of the work.

Peer review is regarded as a form of self-regulation to maintain quality standards, improve performance and provide credibility. In support of frankness, reviewers are typically anonymous and independent.

Cost of peer review

The proposal is for the applicant to bear the cost of peer review. In the instance where peer review is offered upfront on a project to build in transparency and credibility, this is feasible. However, the matter of cost should be considered fully when guidelines on peer review are prepared.

The strategy also proposes that the competent authority is able to randomly select a percentage of EIAs per quarter for peer review by an appropriate person or body. As such review is part of the quality management of IEM, the cost of this must be incorporated in the cost for processing all applications so that no single proposal or entity carries the full cost alone.

Where government is initiating the review for quality management, the review should cover all aspects of the particular plan, programme or project, including a review of the public participation and the decision making. The selection should be ‘blind’ and the reviewers appointed on a rotational basis. This is realistic only in cases where specific scarce skills are not required.

There is also room for a competent authority to appoint a peer reviewer at the outset of a controversial or complex project. In this instance the cost would be carried by the applicant, and should be regarded as support towards quality assurance, and not as a burden or hindrance.

NEMA makes provision for the competent authority to appoint a reviewer where the technical knowledge is not readily available within the department, or where objectivity is compromised.

Other triggers for peer review may include:

- Large-scale projects (larger than a certain combined footprint);
- Significant residual and/or cumulative (negative) impacts;
- Sensitive environments;
- Significant anticipated negative impacts on human communities;
- Anticipated risk to human health;
- Significant negative post-mitigation impacts;
- Work conducted by environmental professionals working as staff within development orientated organs of state; and
- Unprecedented activities or projects.

Where peer review reveals significant shortfalls in quality, ameliorative management action is required. Such action should identify and address the reasons for poor quality, and oversee the necessary improvements.

Action should also seek to minimise the negative implications of poor quality work for the project in question.

Actions identified

- Develop a clear and robust peer review system, that provides guidelines for the process of appointment of reviewers and criteria for establishing their skill and experience, cost allocation, and whether 'double-blind' reviews are required (the identity of both author and reviewer are concealed).
- Develop guidelines to support quality, independence, professionalism and objectivity in the practice of peer review.

Pillar 9

A professional association for Public Participation Practitioners is established under the Council for Environmental Professionals.

A professional association for Public Participation Practitioners is proposed in order to address concerns about the specific skills which are required for successful public participation.

Practitioners specialising in public participation are subject to the same categorisation of skills and experience suggested for EAPs, and are required to meet the same criteria with respect to codes of conduct and ethics.

Soft skills are essential, and include the ability to address conflict, build consensus and encourage marginalised individuals to express their needs and provide comment. The Public Participation Practitioner is expected to be impartial while ensuring the public has every opportunity to participate in an equitable manner without concern for being marginalised by more powerful stakeholders and developers.

Environmental planning processes require extensive public participation. As the stakeholders tend to have diverse and even divergent needs, a specialist practitioner should always be used in these strategic interventions. The intention to shift public participation to the domain of specialist practitioners in selected situations seeks to attain a greater degree of collaboration and consensus building. The scale, scope and time spent on public participation processes with a strategic purpose should be outlined in a Public Participation Plan. Environmental planning is a platform for intensive public participation as the input informs and shapes the progression of projects that follow.

Participation processes need to remain pragmatic and fit into the timeframes established by a public participation plan or the regulations, whichever applies to the policy, plan, programme or project in question.

The requirements and specific skills for effective public participation are discussed in detail in Building Platform 5 and Building Platform 8.

6. Building Platform 6

Environmental information and information management systems are credible, up-to-date, accurate and accessible to all role-players in IEM systems and processes.

Building Platform 6 addresses Root Cause 6: Lack of effective knowledge management and skills to utilise the knowledge management systems.

The underlying premise of sound decision making is that access to reliable information – both in terms of knowledge and values - should lead to better decisions and integrated environmental management. In turn, informed decisions lead to practices which are more sustainable and ultimately result in improved quality of life for people.

The gathering of information pertaining to the environment involves a number of processes and outputs. The processes include collection, organisation, analysis, interpretation and communication of data and statistics, including GIS and spatial information. The creation of new information entails the collection and analysis of primary data. Interpreting that data requires deduction and extrapolation through rigorous methods which result in information which is useful to decision makers, and others.

The output from these methods is not uniform. The resulting information may be in a variety of formats, including reports, policy statements, guidelines, maps, models and GIS products. Additionally, these are produced by a range of role-players, including functionaries in government, parastatals, research and academic organisations, the private sector and even landowners. Consequently the information may be – or appear to be - fragmented, incomplete, inaccessible, and ultimately fail to inform decision making or further knowledge about current and emerging trends.

While much of the data and information relating to Integrated Environmental Managements available from various government departments, industry, NGOs and consultants, there are no information systems fully implemented to collate the available data and information or to make it publicly available. The Department of Environmental Affairs has taken steps to address this gap, including the Environmental GIS website (http://egis.environment.gov.za) and National Environmental Authorisation System (NEAS), but the solutions are not yet adequate.

Decision makers use information generated, along with their own learning and experience to assess the condition and trends in the environment, to determine and adjust policy directions and to improve decision making at project level. Environmental information management is essential for decision makers to access appropriate information, analyse cause and effect, develop strategies

for action, manage natural resources, prevent and control pollution, and evaluate progress towards environmental objectives and targets.

The critical link between environmental information management and good decision making was recognised and formalised internationally in 1992 under Principle 10 of the Rio Declaration on Environment and Development (the Earth Summit), which states (UNEP, 1992: p. 2):

> *"Environmental issues are best handled with participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided."*

Information about the environment must be accessible and understandable (and thereby meaningful) to citizens so that that they may participate in addressing environmental issues and contributing to decisions. Not only does the information need to be meaningful to the public, it should be relevant and accurate to fully support decision making.

A significant consideration in accessibility of information is the infrastructure. Adequate infrastructure and resources need to be provided particularly to decision makers. Inadequacies in access and technology should be identified, and sufficient resources secured to implement and maintain the information system, including qualified staff, hardware, software, bandwidth, storage capacity and networking infrastructure. A qualified project team should be mandated to achieve defined infrastructure needs, to manage the systems and any implementations, including the system integrations and improvements or expansion in the future

Information should be available and accessible during all phases of the IEM cycle, and the type of information will be influenced by the phase of the IEM cycle, as discussed below.

Planning phase

Typically the information required for planning is presented as:

- existing information on the current state of the environment, also to be represented spatially;
- existing environmental information produced during environmental planning, using instruments such as EMFs and SEAs;
- desired state of the environment, sustainability objectives, indicators and targets, with input from I&APs; also represented spatially;

- information derived from follow-up monitoring; and
- new information acquired during impact assessment studies which adds to baseline information.

Implementation, Construction and Commissioning phases

Within the implementation, construction and commissioning phases, the information and plans generated in the planning phase are applied. There is reliance on tracking systems, such as the National Environmental Authorisation System (NEAS), to monitor progress on applications and record the authorisations and licenses issued.

Information generated is often in the form of reports (e.g. EIA reports. EMP) and these are difficult to access by those outside of the process, particularly after an authorisation has been issued. Standardising the requirements for digital formats will facilitate accessibility to documents, as will providing the information on a suitable public internet platform with links to project documentation.

During the implementation phase the following types of information are required:

- EIA reports, including specialist reports which inform mitigation requirements;
- details of the Environmental Authorisation and its associated conditions of approval;
- EMPs as approved;
- site plans and layout plans; and
- baseline monitoring data to inform evaluation of ongoing measurement of environmental variables during construction and operation, as discussed further below.

Monitoring and Auditing phase

During the monitoring and auditing phase information generated in previous phases is used to track compliance against conditions of approval, norms, standards and legislative requirements.

The phase also allows for routine monitoring, trend identification and requires non-compliance and incident reporting. Effective monitoring requires access to reports, standards and outcomes of decision making processes (e.g. an authorisation) and will generate data. The following are examples of information required and generated during the monitoring phase:

- all authorisations and EMPs;
- input from community environmental forums and other environmental monitoring forums;
- feedback from public participation channels to the authorities, using processes for the registering of complaints and whistleblowing, which can complement checking and monitoring by project personnel;
- primary data from sampling and collections; and
- interpretation and extrapolation of collected data.

Enforcement and Feedback phase

The enforcement and feedback phase is equally dependent on information from the monitoring phase to understand trends and breaches of environmental conditions.

Enforcement can be triggered through regular inspections and reporting, or through complaints. Enforcement is problematic – and more difficult – if the objectives set in the planning stage are not carried through to monitoring, as the indicators and targets identified to measure the attainment of objectives will not be available. It is equally important for information from the enforcement phase to provide evidence-based input to subsequent planning activities, which should incorporate adaptation or responses that have furthered the sustainability objectives.

The Enforcement and Feedback phase is also used to critically consider all the activities that pertain to management and mitigation, in order to evaluate the efficacy of the measures implemented. If the monitoring information indicates that measures are less effective than planned, adaptive management is appropriate.

The interconnectedness and complexity of the socio-ecological systems that constitute the environment introduces uncertainty to the process of anticipating impacts. In the Enforcement and Feedback phase, observed impacts can be evaluated in terms of their significance, as can the efficacy of the mitigation measures applied. The insight from such monitoring should not only be used in the adaptive management of the specific plan, programme or project being implemented, but should also be used inform future planning.

Adaptive management steps may be identified through follow up inspections and monitoring of environmental variables. Adaptive management strives to eliminate, reduce or rectify unforeseen or adverse impacts.

Examples of the types of information required during the Enforcement phase include:

- Environmental Authorisations;
- Environmental Management Programmes;
- compliance notices and other information from the enforcement authority;
- monitoring data and reports;
- registers of public complaints; and
- State of the Environment Reporting.

Pillars for Building Platform 6

Pillar 1: A catalogue of available information is centrally maintained, indicating where information is available and its fitness for use.

Pillar 2: A system to track the planning and authorisation of all proposals subject to EM instruments, tools and processes is implemented, and is available to all role-players.

Pillar 3: Standards for data and information are developed, implemented and reviewed, serving to make more meaningful information available to role-players.

Pillar 4: Data and information are up-to-date, verifiable, of adequate quality and publicly available; appropriate mechanisms are implemented for accessing information.

Pillar 5: A system is implemented for documenting and disseminating tested local knowledge that is accessed during the application of EM instruments and tools.

Pillar 6: Information on activities that impact adversely on the environment is publically accessible.

Pillar 1

A catalogue of available information is centrally maintained, indicating where information is available and its fitness for use.

A central catalogue of available data and information should be maintained and be electronically accessible. The catalogue should manage information is such a manner that users are directed to where information is available and can interrogate its fitness for use.

Typically information about information (metadata) guides users on standards for capturing and sharing of information. Metadata may include various indicators of veracity and a high degree of standardisation supports efficiency and cost-effective data management.

The Spatial Data Infrastructure Act (Act 58 of 2003) was concurred to by the president in 2004. The Act establishes the South African Spatial Data Infrastructure (SDI), the Committee for Spatial information, an electronic metadata catalogue, determines standards for capturing and sharing of spatial information and provides for other matters. The SDI Act is applicable to organs of state which hold spatial information and to users of spatial information. The Act aims to ensure that spatial information can be shared more easily, to avoid duplicating data, set standards for data capture, and to allow data to be kept in a central and accessible storage area. The Act makes provision for the identification of data custodians. Data custodians are organs of state which capture, maintain, integrate, distribute or use spatial information.

The Committee for Spatial Information (CSI) has been in existence for a number of years and includes all custodians. The CSI has approved standards for metadata, custodianships, pricing of data and regulations for the Act.

A catalogue is to be established at DEA to indicate available data sets and information systems also available at other data custodians. Each custodian remains responsible for updating the relevant data. The catalogue directs users to a range of information systems for accessing data and information on specific topics. Additionally the catalogue indicates the source, ownership, scale, location or coverage, and completeness of data. These criteria describe the 'fitness for use' of the data. A catalogue allows gaps in information to be identified, and helps to avoid duplication – of effort and cost – in information collection and provision.

The data catalogue should be published as a public resource by the Department of Environmental Affairs. A suitable mechanism would be a public portal on a website.

A data catalogue requires extensive and accurate 'information about information', also known as metadata.[11] Metadata is structured information that describes, explains, locates or otherwise makes it easier to manage an information source.

Metadata typically includes:

- descriptions to assist in the sourcing of data, such as location, ownership and how to access;
- additional information about quality and fitness for use, including compilation method, provenance (where data originated and any transformation in data), content of data, date acquired, completeness, scale, and more; and
- in the case of GIS information, additional metadata requirements are feature type, scale parameters, datum details and projection details (e.g. WGS84, UTM 34S).

The usefulness of a central catalogue will depend on the accuracy of the metadata, linkages to the data, and the ease with which data can be accessed. The custodians of datasets are responsible for ensuring that the metadata is sufficiently descriptive and accurate, that the correct information is provided to access the dataset, and that the data is accessible in the manner described.

The catalogue should also be made available in print form to allow remote users to request/order datasets.

[11] A metadata catalogue system for spatial information is under development by the Department of Rural Development

Actions identified

- Investigate available datasets also at other data custodians.
- Identify relevant datasets required for the successful implementation of IEM, and obtain the necessary rights to access the datasets.
- Prepare and publish guidelines for metadata requirements and standards (SANS standards for spatial information already exist).
- Establish a central catalogue on a website, including searchable metadata.
- Link relevant datasets via hyperlinks from the website catalogue; alternately, links should direct a potential user to the guardian of specific data and information so that a request can be forwarded for permission to obtain access.

Pillar 2

A system to track the planning and authorisation of all proposals subject to EM instruments, tools and processes is implemented, and is available to all role-players.

The National Environmental Authorisation System (NEAS) is an administrative tracking system that has been developed by Department of Environmental Affairs to report on the progress of EIAs and Air and Waste management applications. The NEAS generates statistics, graphs and other information to describe the progress of applications through the administrative process, and also records decisions. NEAS does not link to the environmental reports related to the applications.

The tracking system needs to include all other instruments and tools used to obtain environmental authorisations, including mining applications under the NEMA (and currently the MPRDA) and strategic environmental instruments such as EMF and SEA.

The tracking system should also trace the progress and issuing of licenses, for example, water use and waste management licenses.

Any additional or supporting information pertaining to an application should be indicated in a record of the history of the application, including specialist reports, directives, monitoring protocols and information, and minutes of meetings. Links to the location of this documentation should be provided (see Pillar 4), and a stable repository for these documents should be centrally provided and maintained. During the assessment of infrastructure needs, consideration should be given to cloud-based solutions to deal with the volume of information, and allow access for up- or downloading from any location.

The tracking system must be maintained and updated regularly, to ensure that the information generated is an accurate reflection of the progress of applications through the process. Bar code scanning by case officers and decision makers, at key points in the administrative process, could

help to establish the physical location and/or progress of an application through the office of the Competent Authority, thereby relieving the administrative burden on officials to manually upload information to the tracking system.

The tracking system should allow stakeholders to identify applications within a given geographic area for the purpose of registering as I&APs and, once registered, to allow access to project information.

Actions identified

- Adapt and/or re-develop the National Environmental Authorisation System (NEAS) by expanding its role as a tracking system to include the tracking of the processes of all EM instruments and tools, including strategic instruments, NEMA mining applications, and various other licenses related to environmental management.
- Submit all material as part of applications as computer files, in electronic/digital format, including all applications for authorisation and strategic planning documentation such as the Environmental Implementation Plans and Environmental Management Plans required by Chapter 3 of NEMA; EIA and other IEM processes should all become digital, where all documents are in soft copy format including specialist studies, public participation records and issue and response reports, and any other annexures).[12] NEAS as tracking system should provide links to the digital documents to be stored at the competent authority.
- Competent Authorities should ensure that links to project documentation can be captured (documents submitted electronically as part of EA applications or strategic planning documents).
- Facilitate inquiries by the general public, and open access to the tracking system to the public.
- Publish a manual for the use of the tracking system by role-players, including the general public.
- Ensure that the tracking system is updated with Environmental Authorisations, licenses, compliance notices, monitoring reports and other sources of information, whenever these are released throughout the different stages in the lifecycle of a proposal.

[12] A hard copy will still be required from the applicant/EAP

Pillar 3

Standards for data and information are developed, implemented and reviewed, serving to make more meaningful information available to role-players.

Implementing standards for data will reduce expensive duplication of effort, data collection, facilities and infrastructure, as the data can be shared, collated and integrated.

To effectively administer data and to make meaningful data and information available to role-players requires:

- accurate and complete description of information resources (metadata);
- data standardisation;
- digitisation of information, including reports; and
- data quality assurance.

The metadata – information about information – should place particular emphasis on:

- the date of the data/information collection;
- the season(s) (if applicable) when the study was conducted;
- the methodology used;
- the scale of the study;
- the reason for the study; and
- the person(s) and qualification of the people carrying out the study.

Standards for the compilation and distribution of information are required, specifically where the information is needed to fulfil particular legislative requirements linked to environmental management.

Information contained in narrative reports and specialist studies for impact assessment should be standardised for quality, and minimum content requirements stipulated (refer also to Building Platform 8 (Pillar 3): Guidelines exist for public participation within the IEM framework). The narrative reports/specialist studies should focus on providing meaning and relevant information in a concise and accessible manner.

Recommendations include:

- summaries and Basic Information Documents (BID) are in plain language, understandable to readers at the level of a Grade 8 learner;
- graphics and maps are clear and legible when printed, and if necessary, span multiple pages to ensure legibility;
- highly technical detail is provided in appendices;
- the length of reports is limited;
- use cross-referencing to avoid repetition;
- use appendices so that only the most important information is contained in the body of the main report, and the data and analysis are included in appendices;
- appendices contain the material which substantiates analysis which is fundamental to the assessment of the impact and the alternatives considered;
- ensure that the data and analysis provided is commensurate with the importance of the impact;
- summaries are concise; and only significant impacts are analysed and reported in detail;
- summaries are available as translations in the most common language(s) of registered I&APs;
- the use of abbreviations and acronyms is limited;
- GIS data is provided in the required format and scale; and
- environmental attributes are consistently defined and captured.

Actions identified

- As indicated in pillar 1, identify the relevant datasets required from other dataset custodians especially on environmental priorities, and use these in Environmental Outlook reporting and SOERs with regard to determining the sustainability objectives, indicators and targets.
- Specify when and how the data should be updated, drawing on new frameworks, strategic studies, and information about projects.
- Specify data standards for monitoring programmes.
- Specify standards for compilation and distribution of information, including specialist reports.
- Develop specifications for data quality to facilitate interfacing, collation and integration, which should include, amongst others, format, scale, file types and source identification.
- Develop criteria to establish fitness for use, which is to be included in the metadata, e.g. source of data, qualifications of team/person, and scale of data/project.
- Develop procedures for integration and interfacing of data, and ensure that the required systems are developed and implemented.

Pillar 4

Data and information are up-to-date, verifiable, of adequate quality and publicly available; appropriate mechanisms are implemented for accessing information.

A policy for securing access to information by various role-players is needed. It is foreseen that different levels of access may be required, essentially separating work in progress (access-restricted) from information open to public comment and verified or completed data (publically available).

Meeting the needs of marginalised communities or of communities without the technical infrastructure to access electronic data, should be addressed. Access could be provided at the local authority through a technology service desk or centre, and hard copies should be made available on request. The Department of Communications gazetted the Broadband Policy in December 2013 which indicates that there will be free public WiFi at selected points to access the internet, including government services.

Specific information systems and linkages between them have been identified as imperatives, including:

- accurate Geographic Information Systems (GIS) within the Competent Authorities;
- accurate GIS linked with other custodian departments' spatial Geographical Information Systems; and
- an information system of all non-spatial information generated during all phases of IEM.

After identifying actions that are applicable to each of the above-mentioned imperatives, each of these imperatives is addressed under a separate heading below.

Actions identified applicable to all mentioned systems

- Agree on a clear vision of information and knowledge management directed at achieving environmental goals.
- Identify the applicable systems and infrastructure required to implement the vision, including GIS to support environmental work (including all GIS spatial data layers developed as part of specialist reports in EIAs and sourced from other instruments such as strategic planning, desired SOERs, SOERs, SEAs and EMFs.), the Department of Environmental Affairs' GIS (DEA GIS), an information system of all non-spatial information, and the NEAS.
- Plan the implementation of the systems needed, and design and implement systems for the loading of non-spatial information and for searching and accessing this information.

- Digitise material and load with the determined search criteria populated, e.g. in EIA this could include the project reference, location and developer.
- Develop user manuals that specify how to upload information, and how to access and retrieve information.
- Train staff to implement, maintain and support the identified systems.
- Secure sufficient resources (e.g. qualified staff, hardware, software, bandwidth, storage capacity and networking infrastructure) to implement the identified systems, and maintain, improve and expand the systems into the future.
- Establish a structure (e.g. a working group or project team) mandated to manage the required activities and achieve the objectives.
- Plan and execute an awareness campaign to promote the knowledge and information systems to stakeholders, including the general public.
- Provide a link from non-compliance complaints registered on NEAS to the relevant website where this documentation is stored.

Accurate Geographic Information Systems (GIS) within the Competent Authorities

Currently the DEA GIS – an internal system – stores spatial information related to EIA applications that are recorded on the application tracking system. In future it is foreseen that the GIS system would provide all GIS spatial data layers developed as part of specialist reports in EIAs and sourced from other instruments such as strategic planning, desired SOERs, SOERs, SEAs, EMFs, which are also required in terms of Building Platform 3.

The GIS system should indicate the existing environmental attributes and sensitive environmental features, exclusion zones identified in EMFs (referred to in Building Platform 3), applicable environmental guidelines, existing or proposed developments and incidents of non-compliance. It should also include the SDF layers in the local and provincial spheres of government, as well as bioregional plans and other strategic environmental instruments integrated into SDFs (e.g. open space systems or frameworks).

The further development of spatial information systems is supported by the pillars in Building Platforms 2 and 3 requiring the alignment of frameworks for environmental management and SDFs in terms of intent, content, timing and scale. Effort should be made to include value-based data as layers, if available e.g. perspectives on the sense of place linked to a certain geographical area.

The ideal is that baseline and planning information from State of the Environment Reporting (spatial information), EMFs and SEAs is made available as far as possible, and is accessible at various spheres and scales. Interrogation of data should be possible from the national sphere, drilling down into the detail; and from the detailed project or local authority sphere up to various

levels of spatial consolidation, such as in water catchment areas and the provincial or national context.

A pre-requisite to scalable GIS information is standardisation. This would facilitate the integration of data, including results from monitoring programmes and the ground-truthing activities that occur during EIA studies. Baseline data and planning data should be interfaced to allow for its use in systems within local, regional, provincial or national government.

Data repositories should be subject to on-going data management, including technical actions such as safeguarding data security and making routine backups, as well as quality management to ensure completeness, consistency and accuracy.

Stable and adequate network infrastructure needs to be implemented to allow for data interrogation, integration and updating, at acceptable speeds and reliability.

Information systems used for environmental management and reporting in the different spheres of government should be standardised, so that the same system or product is used for the same function across all spheres, e.g. GIS. Where this is not possible due to legacy systems and license agreements, the systems should have the ability to interface and a longer term alignment of systems should be planned. The savings that are possible through enterprise-wide licensing could make the necessary systems available to more staff, including staff in provinces and local/district authorities.

Information systems in EM should be made accessible to authorities in provincial, district, metro and local government, in a bi-directional flow to integrate and interface data.

The general public should have appropriate access to existing data and data generated during EMF, EIA and other environmental management processes.

Actions identified

- Expand the GIS system to provide information about IEM processes, including all GIS spatial data layers developed as part of specialist reports in EIAs and sourced from other instruments such as strategic planning, desired SOERs, SOERs, SEAs and EMFs.
- Adapt the EM Information System to indicate existing environmental attributes and sensitive environmental features, exclusion zones identified in EMFs (referred to in Building Platform 3), applicable environmental guidelines, existing or proposed developments and incidents of non-compliance; the system should also include the SDF layers generated by local and provincial government, as well as bioregional plans and other strategic environmental instruments – such as open space systems or frameworks – integrated into SDFs.

- Ensure that baseline and planning information from State of the Environment Reporting (spatial information), EMFs and SEAs is made available as far as possible, and is accessible at various spheres and scales; interrogation of data should be possible from a national sphere, drilling down into the detail, and from the detailed project or local authority sphere up to various levels of spatial consolidation, such as in water catchment areas and the provincial or national context.
- Standardise the information systems used for environmental management and reporting in different spheres of government, so that the same system, software solution, or product is used for the same function across all spheres, e.g. GIS; where this is not possible due to legacy systems and license agreements, the systems should have the ability to interface and a longer term alignment of systems should be planned.
- Ensure that EM information systems are accessible to authorities in provincial, district, metro and local government, in a bi-directional flow to integrate and interface data.
- Ensure the general public has access to existing data and data generated during EMF, EIA and other environmental management processes.

Accurate GIS linked with other custodian departments' spatial Geographical Information Systems

In terms of legislation, the Department of Environmental Affairs is the custodian of spatial data on protected areas, while other government institutions are the custodians of other spatial data sets.

Data custodians capture, maintain, integrate, distribute or use spatial information.

The current Environmental GIS website – egis.environment.gov.za – of the Department of Environmental Affairs provides access to some environmental data sets for download. The website provides links to spatial data sets available from other environmental institutions such as South African National Biodiversity Institute (SANBI), the SA Weather Service, and South African National Parks (SanParks).

Links are also provided to the websites of other custodians of data, such as Council for Geosciences, the Surveyor General and the Department of Agriculture Fisheries and Forestry. While some data sets are free to use, others need to be purchased.

Actions identified

- The DEA Public GIS Portal should in future enable users to access and view spatial data from other GIS portals (refer to datasets identified in Pillar 1 identified actions).
- Identify relevant datasets from other custodian departments, purchase if need be, and establish necessary links.

An information system of all non-spatial information generated during all phases of IEM

The tracking system should provide links to the project documentation, reports and GIS information of all projects subject to various processes aimed at environmental management, and should allow authorisations, licenses, directives and monitoring reports to be viewed. The competent authority should further store and make accessible in digital format documentation, reports and GIS information generated in the application of strategic instruments such as EMFs, SEAs and SOERs.

The information should be expanded to include project information considered by the particular Competent Authority: impact assessments, specialist studies, Environmental Management Programmes, compliance monitoring reporting, environmental audit reports, legal action taken, judgments, compliance complaints, local value-based knowledge and feedback from stakeholders including those in civil society.

Actions identified

- Ensure that NEAS provides links to project documentation such as reports, GIS information, authorisations, licenses, directives and monitoring reports (see also Pillar 1).
- Store and make accessible in digital format documentation, reports and GIS information generated in the application of strategic instruments such as EMFs, SEAs and SOERs, which is likely the responsibility of each Competent Authority.

Pillar 5

A system is implemented for documenting and disseminating tested local knowledge that is accessed during the application of EM instruments and tools.

The value of local knowledge has been ignored or underestimated in the past. Authentic and tested local knowledge should be made available on the GIS systems, so that it is available to inform environmental planning and assessment. Local and indigenous technical knowledge may be accessed as part of strategic planning processes such as SEAs, EMFs and SDFs, as well as during project level environmental assessments.

An example of well-curated and accessible local knowledge is the citizen science projects of the Animal Demography Unit (ADU) at the University of Cape Town. Another example is iSpot (www.ispot.org.za), a citizen science portal for southern Africa which provides photographic, distributional and biogeographic data on all taxa, with species lists, surveys and atlas opportunities. The iSpot site implements a system of self-evaluation and peer review to validate information.

Local knowledge also has components which are value-based, such as perspectives on the sense of place of a particular area or site. Value-based information gathered during studies should be documented and stored, and made available for searches and inquiries.

Actions identified

- Design and implement a system to document and disseminate tested local knowledge on the GIS systems.
- Make provision for the verification of data, information and knowledge, and attaching confidence indicators to particular data, which will add credibility; a range of indicators or flags can be used to signify that particular local data/information has been verified by:
    - a number of local persons;
    - other users of the information; and
    - outside experts.

Pillar 6

Information on activities that impact adversely on the environment is publically accessible.

Information on activities that impact adversely on the environment should be accessible to all role-players.

Pillar 4 indicates that a GIS system should include all GIS spatial data layers developed as part of specialist reports in environmental planning and assessments. GIS data for the existing environmental attributes and sensitive environmental features, exclusion zones identified in EMFs (referred to in Building Platform 3), applicable environmental guidelines, existing/proposed developments and non-compliance should be available, and searchable.

This pillar proposes public visibility of registers of non-compliance and of complaints, consistent with the notion of making available information on activities that harm the environment. The information may or may not include – depending on the context – the origin of particular complaints, but should always provide the nature of the complaint, the specific locality, and action taken to remedy the situation. The system should keep a historic record of complaints, meaning that enquiries can be made by geographic site and a history of complaints will display where relevant.

The co-regulation and incentives proposed by the strategy are coupled with easy public access to monitoring data to mitigate against concealing violations.

Actions identified

- Ensure public visibility on the relevant information systems of registers of complaints, registers of non-compliance, remedial actions adopted, and legal actions taken.

7. Building Platform 7

All role-players are environmentally aware and are capacitated to engage meaningfully in IEM systems and processes.

Building Platform 7 addresses Root Cause 7: Lack of understanding of, and appreciation for, the environment and environmental management instruments and tools.

All role-players need to understand the significance and relevance of a sustainable environment in their sphere of influence, and their responsibilities and rights during IEM processes. Most importantly, there needs to be a clear and consistent understanding of the NEMA principles and acknowledgement that these principles serve as the general framework for environmental management.

While the resolution of environmental issues tends to be left to environmental departments and professionals, there are capacity limitations within the environmental sector, let alone the more acute limitations outside this sector. In many instances role-players do not thoroughly understand the significance of the environment; the mechanisms (instruments and tools) that exist to facilitate environmental management; and the role of public participation in IEM processes.

In this Strategy, the term 'role-players' is defined inclusively to comprise all persons, groups and organisations who are involved in directing, leading or actively contributing to the processes of environmental planning and management, in order to influence the processes and their outcomes. Role-players include EAPs, environmental specialists, the developer/proponent/applicant, and environmental officials in government (including case officers, managers and Heads of Departments). Interested and affected parties (as a subset of the public) are also role-players, as are officials and decision makers in organs of state who have jurisdiction with respect to, or comment on, activities to which an application relates. Section 239 of the Constitution (1996) defines an organ of state as "*any department of state or administration in the national, provincial or local sphere of government; or … any other functionary or institution … exercising a power or performing a function in terms of the Constitution or a provincial constitution; or … exercising a public power or performing a public function in terms of any legislation".*

The term 'stakeholders' defines a narrower group who fall into the category of 'role-players', and is used interchangeably with – and can be taken to have the same meaning as – the term 'interested and affected parties', which has a longstanding use in the IEM vocabulary. Stakeholders therefore include groups and individuals interested in and affected by a proposal, and commenting organs of state. Note that this limited definition of stakeholders departs from the much broader use of the term in the IEM Guideline Series on Stakeholder Engagement (DEAT, 2002), which considers all role-players as stakeholders except for EAPs. It is difficult to agree with the logic of this

encompassing definition of stakeholders, as it hardly seems appropriate to refer to an applicant or the competent authority as merely a ‘stakeholder’.

In summary the term ‘role-players’ is inclusive, and includes stakeholders or interested and affected parties. The term ‘stakeholders’ is used to draw attention to the specific needs of interested and affected parties, who are a subset of the broader public.

All role-players need to understand the significance and relevance of a sustainable environment in their sphere of influence, and their responsibilities and rights during IEM processes. Furthermore, there needs to be explicit, clear and consistent understanding of the NEMA principles which serve as the general framework for environmental management and implementation.

Environmental issues tend to be left to environmental departments or the profession to solve. Even within environmental departments and the profession there are gaps: Building Platform 1 addresses the failure to understand and implement NEMA principles; while Building Platform 2 focuses on the lack of alignment between sectors and spheres of government to give effect to IEM.

The outcome of capacity building should be a significant change in the way environmental management takes place, and a distinct change in behaviour, attitude and values. The National Strategy and Action Plan for Sustainable Development for South Africa identified changing *behaviour, values and attitude* as a key component of a more sustainable development path. The NSSD specifically highlights that a sustainability path will never be achieved if the behaviour of consumers does not change.

Capacity building is the crucial element in changing behaviour, thinking, attitude and values, in order for the country to achieve ecological sustainability. Capacity building specifically for practitioners is addressed by this strategy, including affiliation with professional associations to address behaviour, values and attitude, and ongoing professional development through regular skills workshops or training.

Capacity building for practitioners and officials must specifically enhance their ability to evaluate and address development and policy choices based on a thorough understanding of environmental potentials and limits, and improve their ability to address the environmental and social needs of the public.

Campaigns and capacity building must be tailored to the groups identified. Building on an assessment of current capacity, the capacity needs of all the role-players and stakeholders should be assessed, and the specific capacity building objectives clarified. Programmes should be developed and implemented in ways which are appropriate to the identified needs.

Pillars for Building Platform 7

Pillar 1: Environmental awareness programmes address and effectively communicate information about key environmental issues, how these issues are impacted by development, and the concept of sustainable development.

Pillar 2: A clear and consistent understanding of the meaning of the NEMA principles is enabled among all role-players.

Pillar 3: Marginalised communities are provided adequate access to IEM systems and processes.

Pillar 4: The capacity needs of all role-players in IEM systems and processes are identified, and programmes are developed and implemented in ways appropriate to these needs.

Pillar 5: Capacity building traverses all the building platforms identified by this Environmental Impact Assessment and Management Strategy.

Pillar 1

Environmental awareness programmes address and effectively communicate information about key environmental issues, how these issues are impacted by development, and the concept of sustainable development.

The success of IEM is dependent on appropriate and effective environmental awareness and capacity building programmes.

The National Strategy for Sustainable Development (DEA, 2011: p. 7) identified a need to change behaviour, attitudes and values as a key element towards more a sustainable development path:

> *"One of the major challenges to building a sustainable society lies in changing the current beliefs, values and long-established practices of our society. Many of these beliefs, values and practices promote unsustainable patterns of production and consumption, and include the perspective that human beings are separate from and superior to nature, and that human wellbeing can best be enhanced by acquiring more physical goods or money, as conspicuous consumption is the best measure of success. A key component of moving towards a sustainable society is to change people's perceptions of what constitutes 'wellbeing' and – based on this – to develop new social goals. Efforts should be made to increase awareness and to understand the important role that ecosystems and natural resources play in human wellbeing."*

Providing information is frequently regarded as the crux of awareness campaigns, but information alone tends to be insufficient to change behaviour. There needs to also be the desire to change, the capacity (skills and resources), and a setting in which change is encouraged and facilitated.

The environmental driver for change needs to be presented in a powerful and persuasive manner, as it competes with or contradicts the well-publicised message that wellbeing is assured by ever-increasing possessions. A transition to a sustainable society is less likely, or more difficult, without a substantial transformation in modern lifestyles. (UNEP, 2012).

Awareness programmes are intended to influence people to change attitudes, values and behaviour. Incentives can create a powerful impetus for change; disincentives in the form of carbon taxes and fines, for example, ideally offer a counter balance.

Awareness programmes need to have clear objectives. The overarching objective of awareness campaigns is to change behaviour to be more sustainable, and the indicators should quantify progress towards this end. Indicators could, for example, be focused on consumer behaviour, e.g. how many electric cars sold in a year, and how many plastic shopping bags provided to consumers per month.

Campaigns should be tailored to a target group, in much the same way as described in

Pillar 4.

Specific issues that need to be addressed include:

- insight into and understanding of the value of ecological services, including the replacement cost;
- the principle of sustainability;
- environmental impacts resulting from increased consumerism;
- consequences of the degradation of the environment and the loss of biodiversity;
- the multiplier effect of climate change;
- the interconnectedness of all elements in the environment and the resulting cumulative impacts which are greater than the sum of the parts;
- role of interested and affected parties in IEM (see Building Platform 8)
- the multiplier effect of population growth, linked to urbanisation; food security; pollution of air and water, and noise, waste, and light pollution; and

the implementation of NEMA principles addressed more comprehensively by

– Pillar 2.

Actions identified

- Develop relevant guideline documents and training material (fit for use and fit for the audience) for all role-players on general environmental awareness, environmental rights, ecosystem services and other specific needs identified in the Strategy; such material – while developed largely by government – should be appropriate for use by NGOs and business.
- Develop targeted outreach programmes and campaigns, making provision for those persons who are unemployed, illiterate, may have low levels of formal education and speak languages that are seldom used in scientific documents.
- Identify responsible agencies for roll-out and implementation of outreach programmes and campaigns.
- Develop programmes for inclusion in the school syllabus which focus on environmental rights, the role of interested and affected parties in public participation, ecosystem services and sustainable development.

Pillar 2

A clear and consistent understanding of the meaning of the NEMA principles is enabled among all role-players.

The realisation of the NEMA principles is fundamental to ensuring the sustainable development goal of IEM. Although the NEMA principles have served as the general framework for environmental management since 1998, the attainment of these principles in practice is still irregular and inconsistent. Building Platform 1 also stresses the principles of NEMA and proposes further practical guidance which can be found in national strategic policies.

Innovative approaches are needed to ensure that effect is given to the principles during all phases of IEM procedures. A clear and consistent understanding of the meaning of the NEMA principles should be enabled by the compilation of a guideline document focussing on the NEMA principles and the revision of existing guidelines in the light of the NEMA principles.

Wider campaigns and training to other stakeholders groups should follow the development of guidelines and outreach to practitioners and officials. I&APs should expect – even demand – more succinct attention to the principles in specialist reports and in the general environmental management of policies, plans and projects.

The Strategy suggests that Government fund the development of guideline documents and training material in order to reduce the cost of training for all other entities, including NGOs. Guidelines to assist stakeholders gain a better understanding of national legislation should be developed by the national sphere of government, while provinces may also develop guidelines as needed, in particular to support the environmental responsibilities of local authorities.

Mechanisms to encourage corporate social investment spending on environmental training should have a high profile.

Actions identified

- Provide in-depth training on the application of NEMA principles as a general framework for environmental management for practitioners and government officials.
- Develop and disseminate – to identified stakeholders – awareness campaigns, guidelines and supporting material on the implementation of NEMA principles in the practice of IEM.

Pillar 3

Marginalised communities are provided adequate access to IEM systems and processes.

One of the measures of successful public participation is the ability of the people that participate to influence the outcome.

In project level EIA, the degree of influence or power of individual stakeholders might be dependent on having time to attend meetings, the ability to review and understand lengthy technical documents on the impacts of proposed projects, access to the internet, or knowledge of environmental rights.

The common challenges to participation applicable to South Africa include limitations on citizens as a result of a shortage of education, skills and financial resources. These limitations are compounded by information which may be inadequate or inaccessible as a result of the language and/or the style of writing.

Disadvantaged groups and communities typically experience many of the common frustrations with IEM processes, *and* the constraints of their marginalisation.

Marginalisation is generally applied to a group or groups of people who are outside the dominant culture. These people are side-lined because they do not easily 'fit'. Examples of marginalised groups can be given, though the state of being marginalised is fluid and often situation specific. For example, if the dominant culture in an institution is one of frailty and mental deficiency, the institution is geared to cope with that, and the people are not marginalised. Outside that institution in general society, the same people will tend to be marginalised. There is often an overlap between marginalised groups and vulnerable groups. Vulnerable people are not side-lined in the same manner, tending more to be cared about, decided for and generally 'done to' rather than consulted on what *they* need or want. Practitioners should be attentive to these examples of vulnerable and/or marginalised groups, and always be aware that the list is not definitive:

- children and elderly people;
- ethnic minorities;
- asylum seekers and refugees;
- homeless people;
- those experiencing forms of dementia or other mental illnesses;
- people who do not use speech and/or hearing as their principle means of communication;
- visually impaired people;
- people suffering from a life limiting illness;

- people whose voices cannot be heard e.g. repressed people, battered women, abused children;
- physically challenged people;
- drug addicts;
- single parents;
- people who cannot understand, speak, read or write in English, or the dominate language of the area/process;
- people in poverty, which in South Africa largely corresponds to those previously disadvantaged by apartheid;
- people with a learning difficulty;
- people who need, but are not receiving health or social care services;
- people who are open to prosecution because they are illegally in the country, live where they are not allowed, or sustain themselves through criminal activity;
- people who are reliant on the goodwill of politicians or similar powers to positively improve their chances of survival, or of finding a viable livelihood.

Many of these groups lack general environmental awareness or environmental knowledge; they have insufficient funds and lack other resources to participate; and they tend to be uncertain about their rights and responsibilities in processes. They may be daunted by lengthy technical specialist reports, and lack access to decision making and follow-up monitoring and compliance actions.

Providing access to the IEM systems and processes in support of marginalised communities and groups is not simple. To sincerely include – and not merely apply tokenism – takes time, planning and adaption of processes. By way of example, adaptation might include translating key documents, guidelines and application forms into a variety of languages. In the public participation process, adjustments will be needed. Marginalised groups may not use the same methods of communication as the general public or the rest of the community. They may be apprehensive about formal procedures, and the practitioner will need to establish their needs and adapt stakeholder engagement processes to accommodate their situation.

The degree to which the practitioner is willing and able to adapt will generally determine the inclusivity of the process – or the degree of tokenism.

Pragmatically local projects are best placed to identify marginalised groups, and can be the most adaptive to their needs.

Marginalised groups attempting to access IEM as applicants or developers also need to be accommodated. One model implemented by the Department of Environmental Affairs makes funding available to a service provider in order to provide assistance to people with special needs to comply with IEM regulations. The added benefit of this model is that it involves students in the

transfer of skills. This option has enabled people with special needs to engage in IEM. Due consideration – as always – should be given to the ability of the applicant to comply with conditions of approval, which need to be applied in the operational phase, so that compliance by marginalised proponents is not negatively affected.

Actions identified

- Increase work subsidised by government through service providers and parastatals such as the CSIR and universities; the relevant institutions should undertake EA applications for marginalised communities if required, assist in strategic environmental planning processes, as well as comment on specific environmental authorisation processes.
- Phase in specific capacity building for marginalised communities by the proponent for applications triggered in the refined lists of activities as proposed in Building Platform 4; the refined lists are to include a list of activities which will in all instances have a significant impact on the environment.
- Undertake through government departments specific capacity building in geographical areas where environmental planning projects (such as EMFs) are initiated; this should be done well in advance of the project in order to identify special needs and adapt to suit.
- Investigate the possibility of establishing quasi-independent advice offices to assist marginalised groups and communities to participate in IEM processes; investigate funding options and possible conflicts of interest of advice offices, and compare the advantages and disadvantages against the existing pro-bono initiatives by parastatals and universities.
- Ensure access for impaired citizens is available in the roll-out of broadband and public WiFi access (as contained in the Strategy on Broadband).[13]
- Translate application forms and documents, including guidelines into other languages.
- Ensure digital documents are accessible by people with impairments, using document formats that are 'electronically readable'.

[13] Government Gazette 953 of 6 December 2013

Pillar 4

The capacity needs of all role-players in IEM systems and processes are identified, and programmes are developed and implemented in ways appropriate to these needs.

A critical mass of people is needed to sustain a process of change in values, attitudes and behaviour. This critical mass is sometimes referred to as a social tipping point.

The Strategy requires that all role-players are capacitated to engage in a meaningful manner in environmental management processes. Capacity building is not limited to providing resources, but encompasses skills in the areas of science and technology, organisational and institutional abilities, and the broader human capabilities. The scope is understandably broad, and the number of stakeholders is high, yet these factors should not be seen as overwhelming impediments. Role-players should have knowledge and skills to make the required changes to bring about sustainability-led environmental management.

Groups who can make ongoing contributions towards sustainable development and the realisation of the principles of NEMA include:

- other spheres of government and other sectors with related mandates, in particular transport, housing, public works, tourism, mining, energy, health, and education;
- researchers and academics;
- civil society groups, including workers and trade unions, communities, and NGOs;
- private sector organisations and individuals, including developers, designers, architects, scientists and engineers;
- the general public, especially consumers;
- marginalised members of society; and
- vulnerable women and children additionally need to be aware of and exercise their environmental rights.

The content of the outreach and awareness campaigns must be fit for the audience to be addressed. The methods used in the outreach should make provision for those who are unemployed, illiterate, have low levels of formal education and speak languages that are less often used in scientific documents.

Implementation has to commence with assessment of existing capacity and identification of the capacity development needs of the target groups.

Building Platform 1 explains that a sustainability-led approach will be adopted, and that objectives, indicators and targets will be used to measure progress. Building Platform 3 provides for a progression of instruments and tools, including environmental planning instruments, through which

sustainability objectives are determined for national, provincial and local contexts. These objectives and their associated indicators are refined at project level and become part of the monitoring requirements.

The generation of future decision makers need to be targeted through the systematic integration of sustainable development into national educational programmes.

Needs of environmental professionals

Building Platform 5 identifies the need for the skills and competencies of environmental professionals to be extended, and outlines the associated training required to improve implementation of the IEM system.

Capacity building for practitioners and officials must specifically enhance their ability to evaluate and address development and policy choices based on a thorough understanding of environmental potentials and limits, and improve their ability to address the environmental and social needs of the public.

Capacity building of environmental professionals should include training on:

- IEM terminology, purpose, systems and processes, including how the various EM instruments and tools relate to each other and the development planning process;
- the NEMA principles;
- the sustainability-led approach and sustainability thinking;
- reporting within EM instruments and tools in support of a sustainability-led approach;
- EMF/SEA and SDF integration;
- integration of environmental issues into land use planning and identification of land uses that may have a substantial impact on the environment;
- integrated decision making within all relevant departments and spheres of government;
- the development of sector EIPs and EMPs as required by Chapter 3 of NEMA;
- the various cooperation mechanisms that are available (both legislated and voluntary);
- choice of ‘fit for purpose’ instruments, tools and methods within the IEM framework and phases of management cycle.
- application of existing, improved and new EA instruments and tools;
- enforcement of environmental conditions of approval; and
- setting of biodiversity targets, and biodiversity off-sets.

Capacity needs of officials in local government

Guiding principles need to be developed for the type and level of skills required for effective decision making by local authorities to improve the integration of environmental issues into strategic planning and land use decision making (refer also to Building Platform 5).

Capacity building needs for local government officials include training on the integration of strategic environmental and strategic land use planning (e.g. EMFs/SEAs influencing SDFs and/or IDPs), evaluation of applicable listed activities, and the incorporation of environmental issues into land use decision making. Skills are also required in the identification of possible environmental harm that might be caused by non-listed activities, identification of 'fit for purpose' tools to determine environmental impacts, and the evaluation and mitigation of these impacts.

Skills needed for other interacting professionals

Other professionals (such as town planners, engineers, architects and landscape architects) are in many instances directly managing and undertaking environmental management projects. Consequently the Strategy identifies the need to ensure that these professionals develop appropriate skills to advance IEM as conceived in NEMA.

Environment as a cross-cutting issue gives rise to the need for integration and transdisciplinarity. Multidisciplinarity is characterized by a number of specialists working separately on a common activity such as impact prediction, within their own area of expertise. Multidisciplinarity requires the design of a study to be agreed beforehand with a coordinated, but not integrated, methodology: multidisciplinary activities in EA typically result in findings being presented in a number of individual specialist reports. Interdisciplinarity in EA can be achieved when a number of specialists from different disciplines work regularly with one another and the public in providing information to decision makers. The more recent notion of transdisciplinarity looks beyond the disciplines and is open to other-than scientific knowledge bases, drawing on the knowledge of actors in government, industry and civil society. It is however difficult to teach skills in integrative and holistic thinking and this often comes only with experience. Nevertheless, the following aspects are considered as crucial knowledge and skill requirements, so that other professionals understand:

- the NEMA, particularly the environmental management principles set out in section 2, as well as the concept of Integrated Environmental Management;
- the systems approach to environmental management, specifically the notion that all aspects are interconnected and interrelated, and that changes to one part will result in changes to others;
- the value of ecosystem goods and services, so that development interventions are not harmful or destructive of ecologically valuable resources, and that environmental sensitivities are taken into consideration;
- the value of areas of biodiversity (including ridges, water courses and wetlands, other sensitive ecosystems, and the presence of threatened red data species of fauna and flora), and the ecological goods and services they provide;
- the variety of environmental management instruments and tools, their purpose and effective application, to improve the progression to sound IEM.

Training needs for developers and contractors

Developers and contractors need to receive general environmental awareness training similar to the training identified for the general public and communities. Developers have to be aware of the consequences of irreparable environmental damage which may be caused by their efforts.

As explained in Building Platform 1, and elsewhere, innovation is encouraged. In their pre-application screening and feasibility assessments, developers have the opportunity to make development choices which avoid environmental damage.

This Strategy emphasises the important role of environmental spatial planning in providing a strategic context for development, and the choice of 'fit for purpose' instruments and tools as proposed in Building Platform 4. Understanding the strategic context should save proponents time and money, provided the site is appropriate to the activity and the correct assessment tool is adopted.

The information systems proposed in Building Platform 6 will enable developers to undertake well-informed pre-application screening as part of the pre-feasibility investigation of development proposals. Environmental damaging activities can be avoided by identifying sensitive environments early in the planning process.

The Strategy proposes greater attention to the timely training of contractors and developers, before implementation of a project can proceed. Site clearing, and even construction, commence frequently before onsite environment training and presentation of the EMPr to workers. Most of the irreparable environmental damage is caused as a result of non-compliance with the conditions of approval of environmental authorisations and the EMPr requirements. The training or capacity building of developers and contractors has received little attention. Environmental Control Officers (ECO) should play a more proactive and assertive role in this training.

Actions identified

- Identify responsible government authorities to initiate and oversee the development and implementation of environmental training programmes.
- Develop relevant training material (fit for use and fit for audience) for all role-players involved in IEM systems and processes.
- Integrate the environmental message, and particularly sustainable development in the context of environmental threats and trends, into national education programmes.

Pillar 5

Capacity building traverses all the building platforms identified by this Environmental Impact Assessment and Management Strategy.

Capacity building needs have been broadly presented for different role-players. Additionally, role-players have differing needs across the various interventions contained in the strategy. A summary is provided in Table 5.

	General public		Practitioners	Officials		Developers
	I&APs	Marginalised / Vulnerable	Including other professions and public participation practitioners	Competent Authority	Local Authority	Developers, contractors, site agents
Capacity Building	X	X	X	X	X	X
Awareness Campaigns	X	X	X	X	X	X
NEMA and the Principles	X	X	X	X	X	X
Strategic Environmental Planning	X	X	X	X	X	X
"Fit for purpose" tools	X	X	X	X	X	X
Impacts of non-listed activities					X	
Systems approach to environmental management			X	X	X	
Integrated environmental management			X	X	X	
Ecosystem goods and services	X	X	X	X	X	X
Environmental sensitivities and no-go areas			X	X	X	
Avoiding harm (impact mitigation hierarchy)			X	X	X	X
Accessing information	X	X	X	X	X	X
Providing data	X	X	X			

	General public		Practitioners	Officials		Developers
	I&APs	Marginalised / Vulnerable	Including other professions and public participation practitioners	Competent Authority	Local Authority	Developers, contractors, site agents
Compliance and monitoring	X	X	X	X	X	X
Environmental justice	X	X		X	X	
Soft skills			X			
Constitutional Rights	X	X		X	X	
GIS skills			X	X	X	
Identifying stakeholders and establishing their needs			X			
Social probe and public participation plan			X	X		
Purpose of public participation	X	X	X	X	X	X
Writing reports			X			
Sustainability-led development	X	X	X	X	X	X

TABLE 5: CAPACITY BUILDING NEEDS ACROSS DIFFERENT ROLE-PLAYERS

Actions identified

- Ensure adequate training material is developed and disseminated, tailored to the needs of each target group of role-players.

8. Building Platform 8

The purpose of public participation is understood and the process is used by all role-players in IEM systems and processes to inform environmental governance.

Building Platform 8 addresses Root Cause 8: Lack of effective public participation and appreciation for public participation as a process that adds value to Integrated Environmental Management.

Pillars for Building Platform 8

Pillar 1: The public participation process identifies key stakeholders and promotes meaningful participation to meet the purpose of public participation.

Pillar 2: The IEM systems and processes guide the extent of public participation as appropriate to the IEM instrument or tool being used.

Pillar 3: Guidelines exist for public participation within the IEM framework.

Pillar 4: The outcomes of public participation are integrated into and inform all phases of IEM.

Pillar 5: In selected IEM applications, public participation and/or social science practitioners are included in the team managing public participation processes.

Pillar 1

The public participation process identifies key stakeholders and promotes meaningful participation to meet the purpose of public participation.

Public participation guidelines for IEM define objectives for public participation (DEAT, 2002: p. 9). Those objectives are grouped here to align with broad categorisation of the purpose of public participation as set out by the United Nations Human Settlements Programme (UN-HABITAT, 2004).

- Encourage the public to be more engaged in the decision making processes that have an impact on their local community, by
  - *"raising awareness, educating and increasing understanding between stakeholders (a two-way information exchange); …*
  - *identifying sources of information and the knowledge of local and other stakeholders;*
  - *learning from the knowledge and understanding of the environment of local and other stakeholders"*
- Enhance the public's understanding of how government works and create the opportunity to access governmental decision making processes, by:

- *"assisting in the identification of key issues of concern that need to be considered;*
- *raising a diversity of opinions and perspectives and obtaining a balanced perspective of key issues;*
- *identifying common interests and opportunities for meeting these; …*
- *commenting on the findings of technical studies;*
- *identifying reasonable alternatives;*
- *managing and minimizing conflict;*
- *identifying creative solutions to problems or deadlocks"*

- Provide the public with opportunities to inform, influence and participate in the planning, assessment and decision making related to development policies, plans, programmes and projects, thereby:
  - *"ensuring greater credibility and legitimacy in the decision-making process"*
- Provide the opportunity to be responsible and active citizens; and receptive and accountable decision makers, by:
  - *"establishing trust and cooperation;*
  - *generating a sense of joint responsibility and ownership for the environment;*
  - *assisting in the review and monitoring of activities that may negatively affect the environment;*
  - *contributing to the development of appropriate policy, legislation and regulations; and*
  - *promoting democracy."*

Over and above the purpose of public participation outlined in the available guidelines, Section 2 of NEMA sets out principles which connect to the purpose of public participation.

Principle 2 (f) refers specifically to public participation (bold font emphasis added):

> *"The participation of all interested and affected parties in environmental governance must be promoted, and* ***all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation****, and participation by vulnerable and disadvantaged persons must be ensured."* (NEMA, 1998: Section 2(f))

Principle 2(f) describes what is needed in public participation but does not assign responsibility. Every public participation process is required to be equitable and allow for effective participation, which means that the participation skills and capacity required of both the public and the EAP need to be identified and addressed in a specific context. The effectiveness of public participation should

be measured by the extent to which the processes satisfy the general purpose as laid out above, and any additional objectives adopted for a particular proposal under consideration.

Other principles which relate to the purpose of public participation include:

> *"Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably."* (NEMA, 1998: Section 2 (2))

Public participation must establish the needs of the public, and then consider these needs in an impartial way, without bias toward any party including the party paying for the public participation process.

> *"Environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons."* (NEMA, 1998: Section 2(4)(c))

The public must be clearly informed of adverse environmental impacts, in a manner which not only describes potential harm but also conveys the implications for their health and wellbeing. Public participation creates the opportunity for people to understand adverse impacts, and to satisfy themselves that they are not subject to discrimination. Additionally, the above-mentioned principle places an obligation on role-players to ensure that vulnerable or disadvantaged people are not unfairly exposed to adverse environmental impacts.

> *"Decisions must take into account the interests, needs and values of all interested and affected parties, and this includes recognising all forms of knowledge, including traditional and ordinary knowledge."* (NEMA, 1998: Section 2(4)(g))

This first part of the above-mentioned quotation requires that the needs and values of interested and affected parties have been adequately and equitably established through the public participation process. The second part of the quotation places the onus on the facilitator of the process to include local and traditional knowledge, on the assumption that this knowledge is no less important than scientific and technical knowledge. Furthermore, decision makers must account for the way in which information sourced from a public participation process has influenced decisions, and, if this was not the case, give reasons why the information was ignored.

> *"The vital role of women and youth in environmental management and development must be recognised and their full participation therein must be promoted."* (NEMA, 1998: Section 2(4)(q))

While public participation should allow for meaningful engagement with all stakeholders, participation processes must accommodate specifically the engagement of women and children. Understanding constraints to their participation will help to shape appropriate and accessible processes.

The public need to be aware of their environmental rights, and the practical expression of these rights. Pressing social development needs are often seen to be in conflict with environmental rights. The Framework for Sustainable Development clarifies the apparent tensions between development environment, in noting that:

> *"there are non-negotiable ecological thresholds; that we need to maintain our stock of natural capital over time; and that we must employ the precautionary principle in this approach. We must accept that social, economic and ecosystem factors are embedded within each other, and are underpinned by our systems of governance.*
>
> *If this generation leaves the next generation with degraded economic, social and environmental assets and less wealth, then the result will be an unsustainable future. Fundamental to understanding sustainable development is recognising the interdependence of our economic, social and environmental systems. The way in which we live in South Africa and the development path that we are currently pursuing, has elements of being unsustainable and consequently not viable, in the long term." (DEAT, 2008: p. 14)*

Pillar 2

The IEM systems and processes guide the extent of public participation as appropriate to the IEM instrument or tool being used.

Public participation processes cannot be approached as 'one size fits all'. The extent of public participation should correspond to the threat posed to the natural environment, the significance of potential impacts on the wellbeing and health of people, and the magnitude and lifespan of a plan, programme or project. The extent of public participation will also be influenced by the locality of the project, the nature of the activity, the sensitivity of the biophysical environment, the cultural or historic value of the setting, and particular socio-economic conditions. Building Platform 4 discusses activities and associated instruments and tools, including those which will expand the suite of instruments and tools. The objective criteria for determining the extent of public participation necessary for these instruments and tools must be specified, and that specification must include stakeholder participation. Objective criteria for the exercise of discretion must guide the appropriate extent of public participation.

The Strategy also proposes the application of a Public Participation Plan. The plan is compiled after a preliminary social probe and serves to identify stakeholders and their specific circumstances. The Public Participation Plan is however not required for all projects. A Public Participation Plan will be required for:

- strategic environmental planning;
- activities that trigger a full EIA (proposed list 1 in platform 4);
- linear activities that trigger a Basic Assessment (exceeding 5 kilometres);
- activities which traverse a sensitive environment, such as Critical Biodiversity Areas or Ecological Sensitive Areas, and areas identified through the NEM:BA and the NEM:PAA.

Public Participation Plans should be prepared as early as possible in the process, and should not prolong the application process. The plan should be developed at the point where the EAP determines the assessment process applicable to an application.

While this Strategy recommends that a guideline be prepared setting out the required contents of, and process for implementing Public Participation Plans, it is anticipated that such a plan would provide the following information:

- brief background to the proposal or project, including scope, alternatives and the decision(s) to be made;
- brief description of the geographic setting of the study area;
- any specific legal requirements;
- observations regarding the types of groups/stakeholders in the area;

- description and assessment of the stakeholders' prior experience of IEM and public participation;
- initial reactions of the public to the project, proponent, decision maker, appointed EAP and Public Participation Practitioner;
- stakeholders' broad understanding of the social, economic and environmental issues that may arise from the project;
- assessment of capacity to participate in the particular process;
- access to support from experienced NGO or other advisors;
- logistical considerations, e.g. languages to be used, suitable meeting times and places, proximity of venues to study area, availability of transport, and how many events would be required to ensure that there are opportunities for everyone to participate;
- an opportunity for evaluation by the public of a proposed participation process;
- the stages of the process, the expected outcomes of each stage, and the tools and methods to be used to achieve the desired objectives;
- a project timeline highlighting when information is needed and the methods needed to ensure a two way flow of information (from practitioner to public, and from public to practitioner);
- a preliminary database of key stakeholders, groups and local associations; and
- the methods of notification that will be most effective, including the regulated methods.

In order to put together the plan, a preliminary social probe will need to identify:

- the groups of people affected, and the most relevant stakeholders;
- existing social structures through which people in the area interact or communicate; and
- the requirements for the Public Participation Plan.

The competent authority is to decide whether the Public Participation Plan as presented is likely to result in meaningful public participation. Guidelines need to be developed for officials to use in assessing the Public Participation Plan.

Strategic environmental planning (such as that undertaken during compilation of an EMF) requires more emphasis on the development of the Public Participation Plan. Identifying the interested and affected parties in a larger more socially diverse study area may be more difficult. The public may also be less responsive as there is no immediate or perceivable threat to their well-being. Additionally, the EM instrument or tool used may be more difficult to understand which could be an obstacle to meaningful engagement. The content and evaluation of a Public Participation Plan will, however, remain largely the same whether the plan is used in project assessment (EIA) or as part of the implementation of a strategic instrument.

Actions identified

- Implement the requirement for a Public Participation Plan for strategic environmental planning; activities that trigger a full EIA (proposed list 1 in Building Platform 4); linear activities that trigger a Basic Assessment (exceeding 5 kilometres); and activities which traverse a sensitive environment such as Critical Biodiversity Areas or Ecological Support Areas, and areas identified through the NEM: Biodiversity Act and the NEM: Protected Areas Act.
- Develop a guideline document for Public Participation Plans, which provides criteria to define the required extent of public participation in different situations, the content of such plans and the recommended processes to be followed.
- Identify guidelines and criteria for determining the extent of public participation when a Public Participation Plan is not required, for the activities (and associated instruments and tools) in lists 2 and 3, as proposed in Building Platform 4.

Pillar 3

Guidelines exist for public participation within the IEM framework.

Various existing guidelines and regulations give direction to public participation in IEM, particularly for EIA and EMF processes. A priority action recommended is to review, consolidate and improve existing guidelines. Guidelines should be made more specific through providing advice on public participation for the wider range of instruments and tools in the IEM system described in Building Platform 4. This review should include the development of sector specific public participation guidelines. All guidelines[14] need to be well-publicised and easily accessible.

Authors of guidelines should be experienced, knowledgeable and endorsed by their peers as such.

The target audience of any guideline includes:

- government authorities responsible for reviewing and commenting on environmental reports and processes;
- environmental professionals who manage or contribute to environmental assessments;
- academics who are interested and active in environmental research, teaching and training;
- non-governmental organizations (NGOs) and civil society organisations; and
- interested and affected parties from the general public who seek guidance on how to engage in environmental processes.

[14] 'Guidelines' include manuals, regulatory guides, guidelines and information series documents.

Websites should be rationalised so that guidelines may be accessed using coherent and structured menu options, ideally through a menu option named 'Guidelines'. Printed versions of guidelines must be available to any member of the public on request.

Guidance on practice

Practitioners should be encouraged to apply the guidance provided using objective criteria, or to exceed the quality and standards described in guidelines. Where practise is poor, the competent authority has the option to refuse an application.[15]

Problematic and contentious public participation practices have been identified, and the guidelines should give direction on the following:

- formulating criteria for deciding when capacity development is no longer a discretionary exercise but a requirement for meaningful public participation;
- planning for and implementing capacity building workshops;
- using community structures for reaching I&APs;
- using plain and jargon-free language, and explaining scientific or technical notions in layperson's terms;
- describing and evaluating how the policy, plan, programme or project is designed to meet the NEMA principles;
- describing the implications of impacts for people, their wellbeing and health;
- communicating with I&APs at stipulated intervals, regardless of progress;
- managing and minimizing conflict;
- improving report writing (detailed below); and
- providing relevant and timely information in the IEM process.

The guideline should also provide direction to government officials and others on the appropriate extent of public participation required by considering a combination of spatial and environmental context, and the instrument or tool being used. Additionally, the competent authority must evaluate the quality of the public participation using or obtaining input from the I&APs. This quality evaluation should be done prior to making a decision.

Information on the proposed Public Participation Plan must be included in the updated guidelines. Parameters for a preliminary social probe required to identify and describe the beneficiaries of a Public Participation Plan should also be stipulated.

Reports are the most common output from assessment processes, and there is room for improvement. Reports must be less bulky, and the main focus should be on significant impacts and

[15] NEMA, Sections 17 and 18

considerations. Reports should state these impacts and spell out the implications for the natural environment, human health and wellbeing, and ecosystem services, and elaborate on opportunity costs. Impacts which extend beyond the physical boundaries of a site or area must be explained and evaluated in terms which allow the public to understand cumulative impacts in space and time.

Reports need to be more user-friendly, and the following is advised:

- provide a succinct and informative executive summary, in writing that is easily understood; the executive summary needs to be translated into other languages spoken in the area (preferably two besides English), and professionals should be used to do the translations;
- limit the length of reports:
- use cross-referencing so that the same information is not written more than once;
- present data and analyses in appendices, to ensure that only the most important information is in the main report;
- ensure that the data and analyses provided are in line with the importance of the impact;
- use easy-to-understand language and appropriate graphics in the report; limit the use of abbreviations, acronyms and jargon, while regularly defining concepts and terms;
- use a standardised report format;
- focus the report on the assessment of impacts, using status quo information to demonstrate anticipated change;
- evaluate proposals rigorously, including alternatives and mitigation measures;
- reproduce maps in the report so that they remain legible; maps may need to be divided over several pages to meet this requirement;
- avoid verbose and bulky descriptions, and instead use shorter sentences and fewer words;
- consider carefully comments from I&APs and respond in good faith with cross-references to sections in the report and/or appendices and annexures where the issue is discussed; the purpose is to clearly demonstrate how comments were dealt with, or alternatively to state reasons for not adopting a suggestion or proposal. The use of non-specific responses such as 'noted', should be avoided.[16]

Actions identified

- Review, revise and where appropriate consolidate existing public participation guidelines and sector specific guidelines.
- Improve and where necessary develop public participation guidelines for the wider range of instruments and tools proposed in Building Platform 4.
- Provide guidelines for Public Participation Plans, social probes, and report writing.

[16] Specific proposals made by NGO sector

Pillar 4

The outcomes of public participation are integrated into and inform all phases of IEM.

NEMA 2(4)(g) requires that during the public participation process the "*interests, needs and values of all interested and affected parties*" should be established. As information gathering is costly and time consuming, the information produced (output) should be valued and used throughout the IEM cycle.

The assessment process as well as the decision making process should report on the effectiveness of the public participation. The reporting should include how the comments and information received influenced the assessment and decision making respectively.

Within a typical management cycle – 'Plan, Do, Check and Act'– the interests, needs and values of I&APs constitute useful information which may –

- provide focus for the process of assessment
- report on sustainability concerns and environmental management issues which are significant to I&APs,
- define criteria and indicators for monitoring impacts throughout the lifespan of a development.

Planning

Information obtained through the public participation process of projects which have been concluded - whether implemented or not – should inform future plans. The approach will serve to reduce the burden on the public to continually provide the same input for various projects within the same planning region. In addition incorporating the interests, needs and values of I&APs with other social and economic information should result in environmental planning which is more people-centred.

Implementation

The environmental practitioner is required to provide a summary of comments received from I&APs, and indicate how the comments have been addressed.

The competent authority is required to evaluate those responses, to ensure that the replies are impartial and that every reasonable effort has been made to incorporate comments. Some of the comments might inform the conditions of approval associated with an authorisation, the mitigation measures required, or the operational aspects of an Environmental Management Programme.

Checking, Monitoring and Acting

NEMA requires a competent authority to provide the applicant and I&APs with reasons for a decision. The reasons should indicate how the competent authority balanced need and desirability in the context of sustainability, and should indicate what is to be monitored, and how, during the life cycle of a project. The decisions on what is to be monitored should reflect the interests, needs and values of the I&APs. If monitoring identifies that adaptive measures are necessary, these measures could in turn inform best practice beyond the context of the project in question.

Contact Information

The Public Participation Guideline[17] suggests that established lists and databases may be used to identify and approach stakeholders. It would be prudent for government to facilitate the registration of I&APs on a generic database where the interests of a stakeholder can be listed, in terms of a particular geographical area and/or an activity; and the registering party gives permission and instruction to be contacted and informed of related public participation processes.

Of concern is the introduction of South Africa's Protection of Personal Information Act, No. 4 of 2013 (POPI), and its requirements around the use of personal information. These requirements include: only collect information for a specific purpose; apply reasonable security measures to protect information; ensure information is relevant and up to date; and only hold as much information as needed and only for as long as needed. While it is valuable to streamline processes for practitioners and the public, the custodian of the information must take the necessary precautions to comply with the POPI Act.

Quality

The competent authority must objectively evaluate the quality of the public participation process prior to issuing an authorisation or concluding the decision making process. The competent authority must evaluate the quality of the public participation using or obtaining input from the I&APs.

Actions identified

- Develop a database for registration of I&APs where the interests of various stakeholders in particular geographical areas and/or in specific activities can be listed, which includes a mechanism to send a communication to relevant individuals and/or groups/associations on the list, inviting them to register as I&APs for the IEM processes for particular policies, plans, programmes or projects that may be of interest to them.
- Develop secure methods to store the personal contact information of I&APs that complies with the Protection of Personal Information Act, No. 4 of 2013.

[17] GN 807of 10 October 2012, 4.5

Pillar 5

In selected IEM applications, public participation and/or social science practitioners are included in the team managing public participation processes.

Two of the long-term steps recommended in the Final Theme 2 report (Section 2.3.4.2, p. 46), are quoted below:

> "*The following longer term actions should be undertaken. These would require amendment to the regulations.*
>
> *1. Registration of public participation practitioner and regulation of the practice. …*
>
> *5. Require that all public participation processes are run by an appropriately qualified and registered practitioner*."

These two steps fit into Pillar 2 of Building Platform 5, which deals with a classification and categorisation system for environmental professionals in the longer term, to ensure that all professional functions within IEM processes are implemented by appropriately qualified and competent registered practitioners and specialists. The focus of the following discussion – under this Building Platform on public participation – is rather on the short term need to involve specialists with social science qualifications and experience in selected IEM processes.

Practitioners of the various components of environmental assessment and management ought to be adequately qualified and experienced. The World Bank Environmental Assessment Sourcebook, Update 5, on Public Participation (1993: p. 7-8) recommends as follows:

> *"**Social science expertise**. Experience also suggests the importance of drawing upon social science expertise. The EAs in Bank experience that have been conducted in more participatory ways have included social scientists on the EA teams. These social scientists were involved in the process from the beginning and contributed in the ways described fully in Box 7."*
>
> *"**Box 7: Roles for Social Scientists***
>
> *The skills of social scientists are needed to manage the EA consultation and participation process. There are four primary areas where these skills are most used: (1) identification of participant groups, stakeholders and other social groups in the project's area of influence; (2) design of consultation/participation strategies; (3) design of mechanisms for conflict management and resolution; and (4) institutional analysis." (World Bank, 1993: p. 8)*

The issue of inadequate public participation is arguably linked to a social science capacity shortfall among those managing such processes, which is unlike the situation for other areas of IEM where relevant expertise is sought to provide disciplinary input. Social scientists have the specialist

knowledge to conduct preliminary social probes aimed at identifying social groups and communities, and understanding their cultural practices; they can analyse social networks and power (im)balances, which helps to better understand and manage conflict; and they have the skills and insight to understand the meaning that people attach to elements of the environment and how proposals would affect livelihoods and well-being. While some of these skills pertain to Social Impact Assessment, they are also pertinent in planning and implementing sound public participation, as per the above-mentioned World Bank guideline.

A resolution of this issue is to ensure that competent and – in the medium to long-term – registered public participation and/or social science practitioners (as proposed in Pillar 2 of Platform 5) are appointed to undertake public participation and social assessment to facilitate meaningful engagement with interested and affected parties in the assessment of selected processes. A screening mechanism, for deciding which IEM applications would require a public participation and/or social science practitioner, could be when a Public Participation Plan is required (see Pillar 2 of this platform). Another screening mechanism could be to require that social practitioners assist the study team in dealing with controversial proposals.

Actions identified

- Develop screening mechanisms for deciding which proposals would require a public participation and/or social science practitioner to be a member of the team tasked with developing a Public Participation Plan, conducting a preliminary social probe to inform the plan (or a detailed social study later, in the assessment stage), and managing a public participation process; one such screening mechanism would be controversial proposals, while another would be to require that a public participation and/or social practitioner is involved when a Public Participation Plan is required as in Pillar 2 of this platform.

9. Building Platform 9

A transformed environmental sector exists.

Building Platform 9 addresses Root Cause 9: Lack of transformation of the environmental sector.

Pillars for Building Platform 9

Pillar 1: The sector complies with codes of best practice to promote black economic empowerment and supports transformation of the sector.

Pillar 2: Imperatives exist to transform the EAPS and NGOs.

Pillar 1

The sector complies with codes of best practice to promote black economic empowerment and supports transformation of the sector.

Pillar 2

Imperatives exist to transform the EAPS and NGOs.

The transformation of the environmental sector within government has advanced, while the private sector does not reflect the national demographic profile. Transformation Codes or a Sector Transformation Charter should be considered to speed up transformation. The transformation of the NGO sector still needs to be investigated.

The Minister of Trade and Industry has published codes of good practice[18] which will be operation by October 2014. The codes measure all organs of state and public entities, but allow that sectors which have issued their own codes of good practice are measured by those issued codes.

The environmental sector should consider the extent to which the Minister of Trade and Industry's published codes of good practice are adequate for the sector. If the identified stakeholders agree that more specific actions will accelerate the attainment of the objectives of the Broad-Based Black Economic Empowerment Act, Act No. 53 of 2003 (BBBEE Act), then a Sector Transformation Charter should be considered.

The legal requirements (BBBEE Act) for a Sector Transformation Charter include that all major stakeholders in any particular sector first be identified, and that these stakeholders participate in the formulation of a transformation charter.

[18] Codes of Good Practice as defined under section 9 of the Broad-Based Black Economic Empowerment Act 53 of 2003, gazetted 11 October 2013,Notice 1019 of 2013

A key challenge for the environmental sector will be to clearly demarcate the sector, and identify the main stakeholders, who should then collectively decide if a transformation charter should be developed. Developing a charter is mandatory, but the charter will be binding on organs of state and public entities once the Minister gazettes the charter as a code.

Interim measures to advance transformation should be explored, and may include focusing on preferential procurement and the development of a skills development scorecard.

Learnerships can be used where there is an identified gap in experience or competence to assist graduates in meeting the requirements for registration as a REAP. A range of learnerships aimed at enabling competence in specific areas is needed. For example, the Department of Environmental Affairs should consider developing a learnership programme for more junior case officers to undergo a structured learning process towards registration.

Mentorship and internship programmes could be designed around the needs of the individual entering the programme.

Internships require real work opportunities under a supervisor (a REAP) and where possible, with a mentor as a third party (preferably also a REAP). This configuration acknowledges that not all supervisors have the capacity to mentor. Acting as a mentor has been included in the proposed Continuing Professional Development (CPD) guidelines as one way of attaining CPD points.

Actions identified

- Demarcate the 'environmental sector' in order to define the scope of the transformation charter, and determine the main stakeholders in the sector.
- Review the Minister of Trade and Industry's published codes of good practice, and determine if the sector requires a specific Sector Transformation Charter.
- Explore interim short term measures including:
    - focusing on preferential procurement and the development of a skills development scorecard;
    - implement learnerships and mentoring programmes; and
    - Investigate the transformation profile of the environmental Non-governmental Organisation sector.

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Subtheme 2: Knowledge and Information
SSI Environmental: Gillian Marais
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Ken Smith, Marita Oosthuizen, Jaco Grundling, Elbie Oosthuizen

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