Chapter 6

SEA EXPERIENCE IN DEVELOPING COUNTRIES

Increasingly, developing countries are experimenting with SEA and some have SEA-type approaches and elements in place already. There is also considerable experience with using a variety of strategic planning processes that display many of the characteristics of SEA (para SEA). We focus first on SEA in southern Africa where a dedicated regional workshop on SEA was organised to feed into this review (SAIEA 2003a), followed by sections covering francophone Africa, the rest of sub-Saharan Africa, Latin America, Asia and elsewhere. But our survey of this field represents no more than a preliminary reconnaissance.

Selected examples of SEA and para SEA illustrate some of the indigenous approaches that have been adopted. These are less common than SEAs promoted and funded by development assistance agencies (which are reviewed in Chapter 4). In most cases where formal SEA has been undertaken in developing countries, the basic aim and approach has mirrored that in the north – namely to identify the environmental consequences (and associated social and economic effects) of existing, new or revised policies, plans and programmes. These represent only a small number of the broad family of SEA approaches. But they are a highly visible sub-set of the large suite of informal or para-SEAs which form part of development policy-making, land use planning or resource management.

No strict boundaries can be drawn for this latter area of application. Only the more evident SEA type elements and approaches are introduced in this chapter. Nevertheless, they indicate the scope and diversity of the extended SEA family in developing countries, where political and economic realities constrain what can be done. In this context, we consider that methodological pluralism is a positive response; the real issue is whether SEA, however structured, informs decision-making and integrates the environment in strategies for poverty reduction and sustainable development in accordance with the Millennium Development Goals. At issue here are larger concerns about the form(s) of SEA that are appropriate to developing countries and their relationship to donor capacity-building and training programmes that promote a particular institutional procedure. We discuss this issue in the concluding chapter and readers may want to have it in mind in reviewing the experience of developing countries.

6.1 SEA in Southern Africa[1]

EIA is now used extensively in most countries in southern Africa. However, many of the governments tend to be ad hoc in their planning and, as a result, EIA is often regarded as an ‘add on’ process “that gets done ‘later on’, after the government, board of directors or other body has decided that the intended initiative is viable and thus worthy of detailed planning” (Tarr, 2003). In recent years, there has been rapid progress in the formulation of policies, legislation and guidelines for EIA (SAIEA 2003b). A number of countries are now considering to make SEA a formal requirement. There are a number of existing legislation entry point for SEA (Box 6.1). Discussions underway at the SADC (Southern Africa Development Community) level on harmonising such policies and laws may also encourage further interest in SEA. Increasingly, calls are being made to develop a protocol for environmental assessment in the SADC region, which would cover both EIA and SEA (Chonguiça and Katerere 2002; SAIEA 2003a).

Many countries in the region have committed themselves to sustainable development and have adopted national constitutions that oblige the State to balance economic development with the long-term needs of the people and the sensitivities of the natural environment. However these constitutional foundations still require to be translated into action on-the-ground. A major constraint remains the lack of institutional

[1] This section draws heavily from Tarr (2003)

Box 6.1: Examples of legal entry points for SEA in southern Africa

No countries in southern Africa explicitly require the use of SEA, though South Africa's National Environmental Management Act (No.107 of 1998) makes provision for the development of assessment procedures that aim to ensure that the environmental consequences of policies, plans and programmes are considered (DEAT 2000). Similarly, clause 1 of the appendix of Mozambique's EIA Regulations (No.76 of 1998) stipulates a number of programme-level activities that require an "environmental impact study", and Malawi's Environmental Management Act (No. 23 of 1996) includes "major policy reforms" as an activity requiring an EIA.

Perhaps the most exciting new laws regarding the use of SEA in the region are the draft Environmental Management Bills for Swaziland and Namibia. Both countries have drafted framework Acts that explicitly require SEAs for new legislation, regulations, policies, programmes or plans. Whilst the Swazi Bill was given royal assent in November 2002, the Namibian government has still not finalised its law, which has been under discussion since 1995. Other countries currently working on new EA legislation are Botswana, Seychelles, Tanzania and Zimbabwe. In the case of Mauritius, the government is currently in the process of revising its 1991 Environmental Protection Act, which will include clauses that require the use of SEA.

Source: Tarr (2003)

capacity and the resources to adequately guide, administer or control EA processes, or to establish and maintain systems to monitor the implementation of EA at any level (IUCN and World Bank 1997). The political and socio-economic context and circumstances are quite different from those in the North, as are the rational norms that are assumed to be most conducive to introducing and applying SEA (Box 6.2).

Box 6.2: Socio-economic and political context for planning and SEA in southern Africa

Various factors have shaped the difficult socio-economic and political circumstances that, to a large extent, dictate the way planning is executed in southern Africa: decades of oppression, resource mining, cultural erosion and poor post-colonial governance.

"Decision-making is theoretically a rational process that strives for the good of the community in the long term (Nilsson and Dalkmann 2001). However, the pressures (be they external or personal greed) on high level decision-makers in southern Africa are such that planning is often driven by forces and desires that result in extremely short-term time horizons. Similarly, entrepreneurs operating in developing countries with inadequate laws and inefficient bureaucracies are, all too often, driven by quick profits rather than longer-term returns. This is exacerbated by the perception that developing countries tend to be unstable and that their investments are "unsafe". Thus, many professional planners regard the decisions of politicians and private sector developers as environmentally and socially unsound and thus unsustainable. Indeed, it could be argued that the fast-growing economies of southern Africa are being built on a platform of unsustainable projects, many of which have been initiated in the absence of policies, plans and programmes.

The situation in southern Africa is perhaps not significantly different from that found elsewhere. Research has shown that rationality in real decision-making processes is usually very limited (Nida-Rümelin, 1997) and decisions are usually driven by values and political considerations (Weston 2000). Partidario (2000) and other authors suggest that SEA works best where well-structured, rational planning processes exist. Moreover, Nilsson and Dalkmann (2001) report that there are very few examples of SEA influencing policy level decisions. The latter are typically characterised by non-rational processes.

This is the challenging setting within which to promote concepts such as SEA in southern Africa".

Source: Tarr (2003)

At the regional level, SADC's *Strategy for Environment and Sustainable Development* (SADC ELMS, 1994), approved in 1996, takes a broad approach. It focuses on "keeping the poor majority of people at the front and centre of the new development agenda for economic growth, poverty alleviation and environmental protection". To meet this challenge, it identifies the need to undertake environmental, economic and equity impact assessments (EIA^3) - in all key development policies, plans and decisions as a crucial step in meeting this challenge (Box 6.3). This approach has much in common with the idea of sustainability analysis but has yet to be tested. However, it may find expression in the work of the New Economic Partnership for African Development (NEPAD).

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Box 6.3: EIA^3 in the Southern African Development Community (SADC).

The SADC Strategy for Environment and Sustainable Development (SADC ELMS, 1994) states (p iii):

"Throughout the SADC region, the largely separate policies and programmes for economic reform, social progress and environmental improvement must be increasingly integrated in a *single agenda and strategy* for sustainable development. The new agenda needs to be anchored and reinforced by incorporating impact assessments as an integral part of decision-making in at least three key respects.

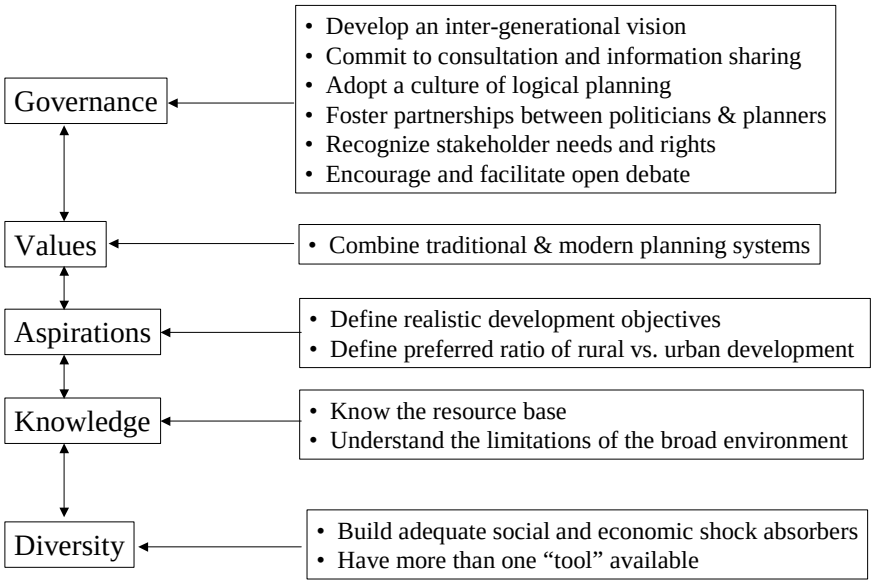
- assessing the likely *environmental impacts* of economic policies and activities;
- assessing the likely *economic impacts* of environmental policies and measures; and
- assessing the likely *equity impacts* of both economic and environmental policies.

Although there are few absolutes in public policy, at least one should prevail in the SADC region. If EIA^3 review of a proposed policy or programme indicates that it will not lead to at least some improvement in the living conditions and prospects of the poor majority, then a sustainable alternative must be found that does".

The Secretariat for Eastern African Coastal Area Management (SEACAM), based in Mozambique, is expanding its Environmental Assessment (EA) programme and is trying to tie it more closely to a broader framework of integrated coastal zone management. SEA will build on the ongoing EA programme and address the cumulative effects of a large number of smaller developments that cannot be captured by the "traditional" project EA. For example, the large number of small tourism developments springing up along the Mozambican coast do not have major environmental and social impacts on their own. However, collectively, they degrade important natural areas and can disrupt local communities. The SEA programme aims to help regional planners, NGOs and EA managers to better understand and proactively manage the environmental impacts of policies, programmes, sector developments and regional plans.

The use of SEA in the region to date has been extremely limited, but there has been considerable experience of national-level strategic planning and more local, integrated, land use and resource management planning that, in the broader sense, can be regarded as para SEAs. This experience might offer a platform for an SEA approach suited to planning and decision-systems in the region that work. In this regard, Tarr (2003) questions whether SEA in southern Africa should follow the 'EIA route' or pursue a totally different approach aligned to the actual dynamics of decision-making in the region. He suggests five criteria as key requirements for implementing SEA in the region (Figure 6.1).

Figure 6.1: Key requirements for implementing decision-focused SEA in southern Africa (Tarr 2003)



In 2002, IUCN-ROSA commissioned a desk study review of EA documents produced for three development initiatives taking place in the region (Lesotho Highland Water project, Lubombo Spatial Development Initiative in South Africa, and the Sugar Cane Irrigation Industry in Swaziland). The study aimed to understand how the EIA processes were applied with respect to trans-boundary and cumulative implications for natural resources essential to agriculture or for the livelihood of people who depend on agriculture (Chonguiça and Katerere 2002). It found no evidence that these issues had been accounted for by the individual projects, but did identify the emergence of several initiatives that were attempting integrated development planning across SADC countries: Kalagadi transfrontier initiative (South Africa-Botswana), the Great Limpopo Transfrontier Park (South Africa-Zimbabwe), and river basin commissions (eg. Zambezi River Authority).

Below, we review SEA use in different SADC countries, starting first with South Africa which has the most experience, and then alphabetically. Information has been drawn, inter alia, from Tarr (2003) and from presentations made at a recent workshop on SEA in southern Africa (SAIEA 2003a)

6.1.1 South Africa[2]

South Africa has a history of EIA application dating back to the 1970s. The EIA Committee of the Council of the Environment was established in 1983 and initiated research on EIA which led to the introduction of Integrated Environmental Management (IEM). Guideline documents on IEM were published (Department of Environmental Affairs, 1992) which are still widely used in South Africa and which have provided a basis for several hundred voluntary EIAs.

In principle, IEM included application to policies and plans. It was originally intended that IEM and planning be integrated. However, after the establishment of the first democratic government in 1994, two separate processes and decision-making procedures were developed for planning and IEM. The first legislated EIA requirements came into effect on 1 September 1997 in the form of regulations

[2] (With contribution by Nigel Rossouw, CSIR, South Africa)

under the old Environmental Conservation Act (No.73 of 1989). These regulations only made provision for EIA and not monitoring, auditing and environmental management planning. Furthermore, they did not apply to policies and plans. The IEM philosophy (of integrating environmental issues into all stages of policy, planning and the project cycle) was therefore lost.

The EIA regulations emerged separately from the consultative national environmental policy process (CONNEPP) which culminated in the promulgation of a new National Environmental Management Act (NEMA) in 1998. This Act states that any activities (defined as policies, plans, programmes and projects) which may significantly effect the environment must be considered, investigated and assessed, and outlines minimum requirements for assessing impacts, including cumulative effects. But the EIA regulations issued under the old Environmental Conservation Act still remain in force. However, amendments to the NEMA chapter on IEM have been tabled in the Parliament. New regulations to legislate for the mandatory use of environmental assessment tools are currently being prepared in support of NEMA. It is likely that they will ensure the implementation of a greater range of environmental assessment tools than just EIA.

In the mid 1990s, changing perceptions led to the emergence of an innovative approach to SEA pioneered by the Council for Scientific and Industrial Research (CSIR) (Wiseman, 1997). This is of particular interest because, in practice, South Africa is a unique amalgam of developed and developing economies and societies. It can draw on and adapt lessons from industrial countries readily, but also must have regard to their portability and use in settings that are comparable to those in many developing countries. As a first step, an SEA primer was published (CSIR 1996) followed by a draft SEA protocol (CSIR 1997a). The emphasis was placed on "assessing the effect of the environment on development needs and opportunities" with a strong focus on assessing cumulative impacts. Table 6.1 presents a frequently referenced comparison by CSIR of the conceptual differences and emphasis between EIA and the evolving SEA process in South Africa. CSIR highlights these differences to suggest ideal objectives and characteristics to which EIA and SEA should aspire, although they are not always realised. The political and socio-economic realities under which SEA is practiced results in the process responding to context specific needs.

Table 6.1: The conceptual differences in understanding and emphasis between EIA and SEA in South Africa (Source: CSIR, 1996)

EIA	**SEA**
Is reactive to a development proposal	Is pro-active and informs development proposals[1]
Assesses the effect of a proposed development on the environment[2]	Assesses the effect of the environment on development needs and opportunities
Addresses a specific project	Addresses area, regions or sectors of development
Has a well-defined beginning and end	Is a continuing process aimed at providing information at the right time[3]
Assesses direct impacts and benefits[4]	Assesses cumulative impacts and identifies implications and issues for sustainable development
Focuses on the mitigation of impacts	Focuses on maintaining a chosen level of environmental quality
Has a narrow perspective and a high level of detail	Has a wide perspective and a low level of detail to provide a vision and overall framework[5]
Focuses on project-specific impacts	Creates a framework against which impacts and benefits can be measured

SEA has not been adopted by national policy-making institutions or for policy-making processes, but has been applied at the plan and programme levels of the project cycle - in two distinct but related ways (CSIR 1997):

- *Integrated studies* forming part of the processes of planning and programme design - providing strategic information on the environment, including resource opportunities and constraints, existing activities and processes and the carrying capacity of the environment. The information from these SEAs is intended to inform later stages of the project cycle. Examples include several SEAs: the Port of Cape Town (see Case 6.7), Durban South Industrial Basin; Middleburg Mining; East London West Bank IDZ (see Case 6.1); Kwazulu-Natal Trade and Industry Policy (Box 6.4), and Mhlathuze municipality (where the aim was to integrate SEA and planning).

- *Large-scale EIA studies* which were labelled as SEA, although questionably in some cases. For example, the 'SEA' of the Coega Harbour and Industrial Development Zone (IDZ) was undertaken after strategic decisions on the nature of the development and its location had been made. The EIA process for the harbour occurred in parallel with the SEA process. So the SEA did not link to strategic decision-making processes and was focused solely on answering the question: "under what conditions can development proceed?" Another example of such a post-hoc regional EIA is the 'SEA' of the Cape Town Olympic bid.

Box 6.4: Preliminary SEA for the KwaZulu-Natal Trade and Industry Policy, South Africa

In 1996, the Regional Economic Forum (REF) in KwaZulu-Natal embarked on a process to formulate a Trade and Industry Policy for the province. Various investigations were initiated to provide an input to the process, including the preparation of a Regional Industrial Location strategy. The Council for Scientific and Industrial Research (CSIR) was commissioned to undertake an SEA. Given that only a broad framework for the policy existed, it was not possible to undertake a review-based SEA. Instead a preliminary SEA was carried out which aimed to identify opportunities for and constraints to industrial development in the province.

The intended role of the SEA was, therefore, to guide policy formulation, and the SEA was structured to provide a mechanism whereby the environmental implications of the components of the policy could be reviewed rapidly. However, it is not clear that a Trade and Industry Policy has yet emerged. So the utility and influence of the SEA is difficult to gauge. It comprised several components:

- ***SWOT analysis***: to provide an overview of strengths, weaknesses, opportunities and threats (SWOT) pertaining to the KwaZulu environment. 10 specialist (discipline) studies were commissioned from which SWOT issues were drawn.

- ***Industry profiles***: An 'environmental' profile was then drawn up for each of 11 industry types (sugar, textiles, chemicals, etc.). The profile listed resources consumed, and air, water and solid waste generated by the industry type.

- ***Environmental assessment matrix***: designed to link the industry profiles with the SWOT analysis so that the environmental implications of promoting a certain industry would be understood in formulating the Trade and Industry Policy. For example, sulphur dioxide was listed as an air pollution emission for several industry types, and was frequently linked to a major weakness in the sulphur dioxide carrying capacity of Durban and Richards Bay. The idea proposed was that if other industry types (those not included in the Preliminary SEA) were being considered in the policy, then they could quickly be profiled, added to the EA matrix and assessed.

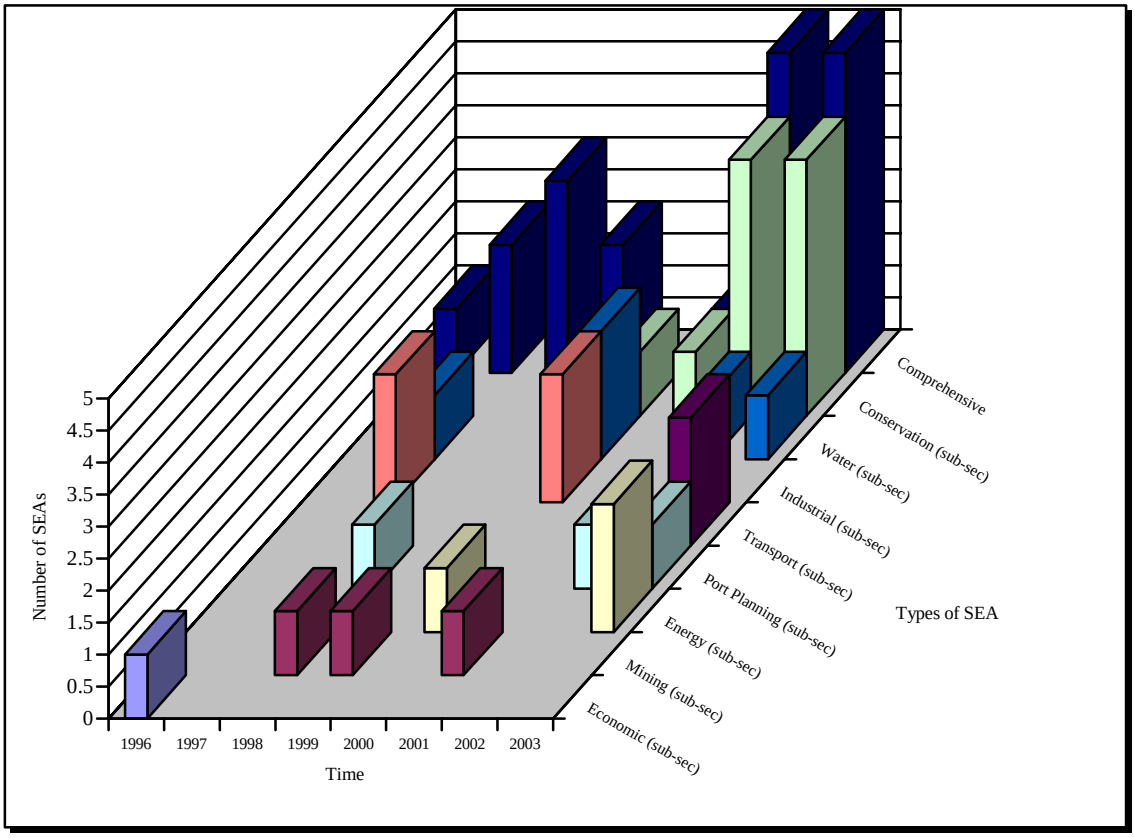
Source: CSIR (1997a)

In other cases, there has been a call for cumulative effects analysis following completion of a number of project EIAs with SEA to be undertaken to co-ordinate the projects and to achieve better regional

planning.

Figure 6.2 indicates the types and number of SEA processes conducted in South Africa over the decade. Nine distinct types of SEA approaches are identified illustrating the diverse and, customised framework that has emerged with elements possibly influencing experimentation in neighbouring countries. This range of approaches reflects the parallel diversification in SEA provision and systems in South Africa (Box 6.5). In addition to national SEA guidelines (DEAT and CSIR, 2000), various policies and regulations also require SEA as part of planning processes (Box 6.5).

Figure 6.2: SEAs in South Africa: 1996-2003 (Source: N.Roussow,. CSIR)



Box 6.5: Provisions for SEA in South Africa's policies, legislation and programmes

- National Environmental Management Act (1998) - requires any activity (policy, plan, programme or project) which has "significant impact" to investigate and assess impacts;
- Land Use Bill (2003) - specifies SEA as a component of the provincial and municipal Spatial Development Frameworks;
- White Paper on National Commercial Ports Policy (2002) - recognises SEA as a tool for port planning to promote sustainable port development;
- National Water Act (1996) – introduced integrated catchment management agencies and plans using a catchment-wide approach;
- Mineral and Petroleum Resource Development Act (2002) and draft Regulations – call for "big picture" assessment, including cumulative impacts, a long-term social plan, etc;
- National Forests Act (1998) – requires use of EA in deciding forestry permits;

- Some of the Provincial planning ordinances – include provisions for EIA;
- Department of Trade and Industry – calls for strategic spatial planning for strategic development initiatives.
- The Municipal Planning and Performance Management Regulations (2001) require SEAs of the municipal spatial development framework.

Building on its early research work and practical experience, CSIR prepared SEA guidelines in partnership with the Department of Environmental Affairs and Tourism for application at the planning and programme level as a proactive management instrument (DEAT and CSIR, 2000). The guidelines describe the main benefits of SEA and the contribution that it can make to guide development within sustainable limits. They include 10 principles for SEA that provide a basis for the development of local SEA processes. These are that SEA:

1. is driven by the concept of sustainability;
2. identifies the opportunities and constraints which the environment places on the development of plans and programmes;
3. sets the criteria of environmental quality or limits of acceptable change;
4. is a flexible tool which is adaptable to the planning and sectoral development cycle;
5. is a strategic process which begins with the conceptualisation of the plan or programme;
6. is part of a tiered approach to environmental assessment and management;
7. has a scope defined within the wider context of environmental processes;
8. is a participative process; and
9. is set within the context of alternative scenarios;

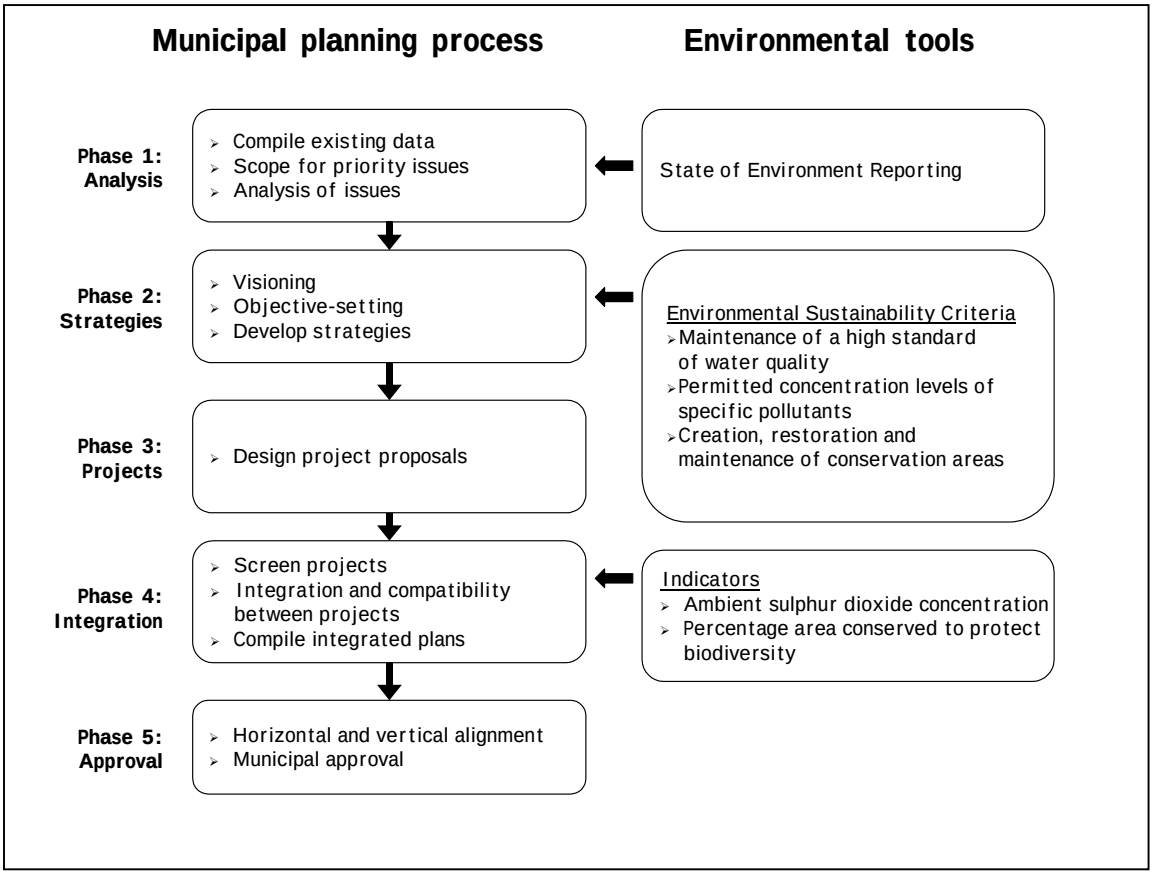
The guidelines present SEA as including the concepts of precaution and continuous improvement and the following steps and elements:

- identify broad plan and programme alternatives;
- screening;
- scoping;
- situation assessment;
- formulate sustainability parameters for the development of the plan or programme;
- develop and assess alternative plans and programmes;
- decision-making; and
- develop a plan for implementation, monitoring and auditing; and implementation.

Individual and specific SEA elements can either be used to support existing processes for plan and programme formulation, or they can be combined into a separate stand-alone SEA process, depending on what the context requires. Thus SEA is promoted as a tool to complement the planning process, by providing the information necessary to ensure that development maintains and enhances environmental resources. An example of how elements or components of SEA can be used to support local municipal planning processes is illustrated in Figure 6.3. One of outputs of the municipal planning process illustrated in this figure is the Municipal Spatial Development Frameworks (SDFs)[3]. The primary objective of an SDF is to manage the type, location and quality of future growth and change in a

[3] An SDF is one strategic component of an Integrated Development Plan for local authority areas, required in terms of the Municipal Systems Act (2000); sectoral plans make up the remaining components of the IDP. The IDP/SDF process is based on the principles of sustainable
management and use of resources making up the natural and built environment, equality, efficiency, integration, and fair and good governance. The SDF has four specific components: policy for land use and development, guidelines for land use management, a capital expenditure framework, and a strategic environmental assessment (Susie Brownlie, pers.comm..).

Figure 6.3: Example of how SEA elements can be integrated and used to support the municipal development planning process
(Source: Rossouw and Govender, 2003)



region so that it contributes to sustainable development. "Sustainable development" embraces consideration of both human and ecosystem well-being, taking into account such aspects as equitable access to resources and opportunities, resilience to change, sustainable livelihoods, poverty reduction, economic efficiency and ecological integrity. An SDF is used to inform a land use management policy, and clarify needs and implementation priorities for the local authority. The preparation of an SDF thus requires a strategic approach.

There are also examples of private sector organisations coming together to commission SEAs to help them assume environmental responsibility in their operational protocols (eg for marine diamond mining off the west coast of South Africa – see Case 6.9).

6.1.2 Botswana[4]

In Botswana, the Department of Water Affairs has pioneered the application of SEA. It undertook the first documented "SEA" process in 1991 in developing the National Water Master Plan. This outlined the social, economic and environmental implications of various options for providing water to the country. The plan also identified topics that should be included in an environmental assessment of water development projects: hydrology, plant ecology, faunal studies, archaeology, medico-ecological aspects, land use changes, and tourism and recreation.

Other SEA-like processes include the incorporation of environmental issues into the district and national development planning processes, and environmental management plans for protected areas, eg. Okavango Delta management plan. The application of SEA principles within the national development planning process was initiated in 1997. The process involved an audit of the seventh National Development Plan - then being implemented – to identify the environmental implications of the proposed development activities to be undertaken by each government Ministry. This was an initial step towards ensuring that future development plans would reflect better consideration of environmental issues.

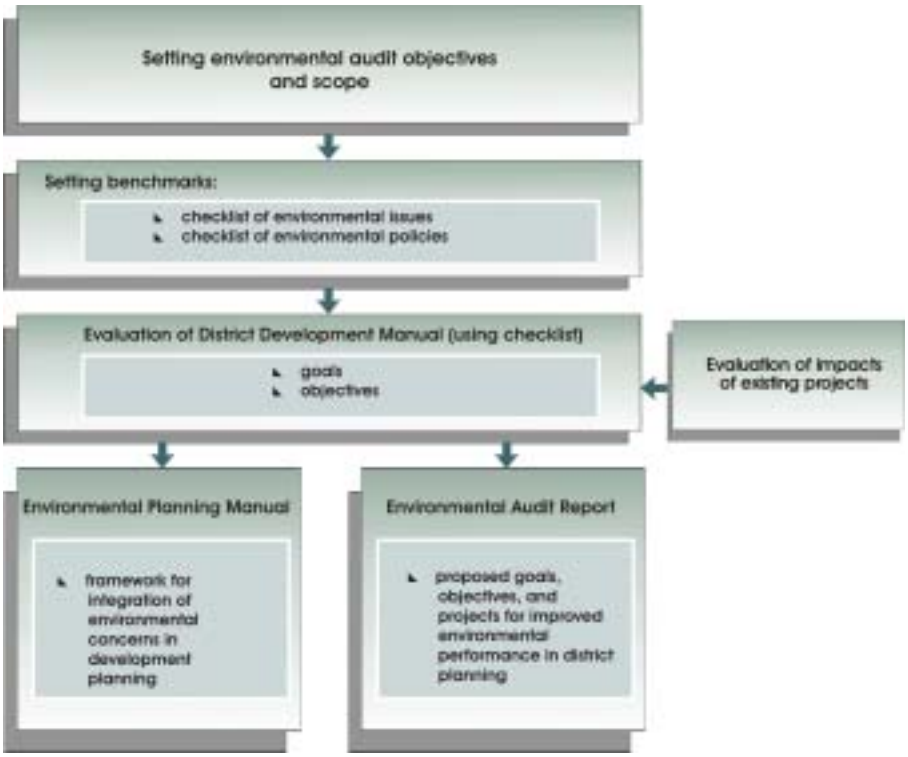
The audit showed that the environmental limitations to development were not considered at the outset. Most ministries did not undertake any environmental assessment of their activities and had no budget to deal with any emergencies resulting from the impact of their activities. A key output of this process was a revised Planning Officers Manual (still in draft) which, among other things, sets out the need to address environmental issues in the early stages of development planning. The revised manual has not yet been formally approved. But the principles in it have been applied in preparing subsequent development plans, and have helped to address environmental implications more explicitly. The latest development plan (National Development Plan 9) includes a chapter on the environment. It identifies key environmental issues needing to be addressed as well as pointing out the limits that the environment places on development.

Following the national process, a pilot exercise was undertaken in three local authorities (Central District, Selibe-Phikwe, and Gaborone) in 2000 to examine the adequacy of district plans in addressing environmental issues (Figure 6.4). The audit of the three authorities looked at the likely impacts of projects contained in the district plans (eg Republic of Botswana 2001a, b). There were two main outputs: the Environmental Planning Manual which provides a detailed process for integrating environmental issues in district planning; and a revised version of the District Planning Handbook, which summarises the key aspects. The documents have been instrumental in shaping the latest local authority plans, although they are still in draft form.

The Okovango River has been subjected to two SEA-type processes: one for the whole river basin (covering Angola, Botswana and Namibia); another for the part of the system in Botswana (the delta). The development of the Strategic Action Plan for the basin (OKACOM 1999) involved several components: (i) specialist studies on particular issues such as climate, hydrology and land use; (ii) an assessment of characteristics and limits of the various parameters; and (iii) the formulation of development and management options consistent with maintaining the integrity of the delta. The development of a management plan for the Okavango delta (still ongoing, Box 6.6) is the most recent example of an SEA-type process in Botswana. The process will involve the setting of a vision for the delta and the formulation of development options consistent with that vision.

[4] With contributions by Kagiso Keatimilwe, CSIR, South Africa, and Bothepa Kgabung, University of Botswana).

Figure 6.4: Framework for Environmental Audit of District development Plans, Botswana



Box 6.6: Okavango delta management plan

The Okavango Delta Management Plan was prepared to "*integrate resource management for the delta that will ensure its long-term conservation and that will provide benefits for the present and future well being of the people, through sustainable use of its natural resources; and to develop a comprehensive, integrated management plan for the conservation and sustainable use of the delta and surrounding areas*".

There have been various proposals for large-scale water off-take and watershed development in the delta area. But there is little climatic and hydrological information to predict the impacts of hydrological changes on the Delta's ecology. In the past, planning and decision making did not consider the overall economic value of an intact delta ecosystem. Key issues in the delta area include: land and resource use conflicts; tourism; settlement; and grazing (zoning for both of the latter two issues is provided in the plan). The management plan aims to:

- provide a long-term vision of the development options and management scenarios for the Okavango Delta;
- serve as an integrated, dynamic management plan, which provides the overarching framework and contextual guidelines for individual area and sector plans;
- determine levels of use in order to ensure sustainability and protection of the natural resources of the Ramsar site;
- set up the institutional framework required for the management of the Ramsar site;
- determine research and monitoring requirements and standards;
- provide data and information requirements and feed development options into OKACOM (the Okavango Commission – Botswana, Namibia and Angola) basin management planning exercise; and
- build capacity in the implementing institutions and in communities.

Source: Source: NCSA (2002).

6.1.3 Lesotho[5]

The Environment Act No.15 of 2001 does not specifically refer to SEA, but it is implicit in the provisions under the schedule on types of projects for which an EIA is required:

(a) major changes in land use;
(b) urban and Rural Development including:
    - re-zoning;
    - declaration of development areas;
(c) national conservation areas which include:
    - formulation or modification of forest management policies;
    - formulation or modification of water catchment management policies;
    - policies for management of ecosystems, especially by use of fire;
    - any government policy on the use of natural resources.

The Act also provides an umbrella safeguard by stipulating that any policy that will lead to projects which are likely to impact on the environment will require an EIA. It still remains to be seen how these will be put into practice. The most appropriate route would be through promulgation of enabling regulations of the Act.

Prior to the Rio Earth Summit on sustainable development, Lesotho developed the first National Environment Action Plan (NEAP) in Africa in 1989. It was subsequently incorporated into a National Action Plan to Implement Agenda 21 to provide a basis for integrating environment and socio-economic concerns. These issues are also are also central in Lesotho's Poverty Reduction Strategy and National Vision (2003).

The feasibility studies for Phase 1A of the Lesotho Highlands Water Project (LHWP)[6] had no EIA but, based on the lessons from this phase, Phase IB involved several baseline studies. These culminated in a comprehensive environmental impact study (undertaken by consultants) and an accompanying environmental action plan aimed at mitigating project impacts. The latest report (2002) on "Development of a Katse and Mohale Reservoir Zoning Plan" by the Lesotho Highlands Development Authority (LHDA) has a component on SEA. The description of the features of the two areas, Phase 1A (Katse) and 1B (Mohale), was used to define a suite of strategic environmental issues. Criteria for sustainable development were then identified. These were used to guide zoning and management options.

Similarly, under the Maloti-Drakensberg Conservation and Development Project - a transfrontier initiative straddling the borders of Lesotho and South Africa - a resource analysis and strategic environmental assessment will be carried out for development planning under the protected area planning programme.

[5] With contribution from Bore Motsamai, Botswana.

[6] The Lesotho Highlands Water Project (LHWP) is Africa's largest infrastructure project — a massive, multi-dam scheme built to divert water from Lesotho's Maloti Mountains to South Africa's industrial Gauteng Province. Construction is being undertaken in four phases. The first phases of the World Bank-supported project involve the construction of three large dams which, when completed, will dispossess more than 30,000 rural farmers of assets (including homes, fields, and grazing lands) and deprive many of their livelihoods.

6.1.4 Malawi

Several legal documents support EA in Malawi: the Malawi Constitution, Vision 2020, the National Environmental Action Plan (1994), the Environmental Management Act (1996), and the National Environmental Policy (1996). Policies were restructured whilst formulating the Decentralisation Act (1998). From the late 1990s, DANIDA, the World Bank and other donors funded the Environmental Support Programme and supported the process of decentralisation. This included support for the formulation of District Environmental Action Plans (DEAPs). By the time DANIDA funding ceased in 2002, some districts had not fully formulated their DEAPs. As a consequence, some activities stopped whilst others have continued under normal government programmes.

The Environmental Management Act (EMA) mandates the Department of Environmental Affairs to certify projects requiring an EA. The EMA makes EA mandatory for all sectoral projects and requires that all sectoral policies should integrate EA. If other sector policies are in conflict with the EMA, the EMA takes precedence.

6.1.5 Mozambique[7]

EIA has been applied in Mozambique since 1993, but the regulation was only formally approved in December 1998. It includes provisions covering EIA, environmental management plans and environmental auditing. It also requires that an EIA be undertaken for all development projects, policies, plans and programmes which may have a significant impact on the environment.

The Ministry of Environmental Affairs recognised the need to improve the planning process. In 2002, it engaged in a series of internal discussions with other government bodies and provincial authorities. These led to an SEA being undertaken in Inhambane Province. It was driven by the need to improve planning in a large coastal area with growing tourism to several beaches (Barra, Rocha, Tofinho and Tofo), and to make EIA more efficient and flexible. SEA was used to encourage an holistic approach to environmental management in this area. It also aimed to overcome the need for separate EIAs for the increasing number of tourist lodges being constructed (see Case 6.2). Subsequently, several more SEAs have been undertaken (Table 6.2).

One is being undertaken in connection with the exportation of sands rich in heavy minerals. Initially, the idea was to export the sands by rail from the mine through the port of Maputo. Separate EIAs were started for different components of the operation (power line, mine, railway to Maputo). But it was then proposed to construct a new coastal jetty away from Maputo where plans were also being developed for tourism. The new proposal was assessed by the government, supported by the Southern Africa Institute for Environmental Assessment (SAIEA) and the Netherlands Commission for EIA. It was recommended that an SEA be undertaken due to the wider potential effects of the proposal. A decision-making group has been established (directors of government departments) as well as a 'platform group' of technical experts and stakeholders where the outcomes will be discussed. The best alternative was selected from six scenarios identified during a platform group workshop assisted by an independent facilitator. The final decision will be taken by the National Council for Sustainable Development (CONDES), co-chaired by the Prime Minister and Minister of Environment.

Other assessments include the following:

- a para SEA is being undertaken in support of the Tourism Development Plan for the Limpopo National Park (the Mozambican side of the Great Limpopo Transboundary Park covering Mozambique, South Africa and Zimbabwe). It is considering a variety of issues relating to the movement of wildlife, the erection of fences, tourism and various management issues;

[7] With contribution by Felicidade Munguambe.

Table 6.2: Examples of SEAs in Mozambique

SEA	Type	Scale	Tier	Did SEA provide information before decision?	Did SEA precede EIA?	Was SEA linked to PPP?
1. SEA FOR Tofo, Barra, Tofinho & Rocha, Inhambane Province	Tourism	Local	Plan	No	No	Yes
2. SEA for corridor sands, Chibuto District	Mines	Regional	Plan	Yes	No	No
3. SEA for zoning planning, Jangamo District	Tourism	Local	Plan	No	No	No
4. SEA of Zoning Plan of Limpopo National Park	Tourism	Local	Plan	No	Yes	No
5. SEA of Zoning Plan of Manhica District	Development plan	Local	Plan	No	-	Yes
6. SEA of Zoning Plan of the Coastal Zone of Lake Niassa	Development plan	Local	Plan	No	-	Yes
7. SEA for Plan of Poverty Alleviation (PRSP)		National	Policy	-	-	-
8. SEA of District Plans of Sanga, Niassa and Nampula provinces	Development plan	Regional	Plan	No	-	Yes

- SEA exercises are being undertaken in the coastal areas of Mozambique, eg the coastal districts districts of Inhambane Province (700 km long), Manhica District and in the lakeshore of Lake Nyasa.;

- an SEA for an industrial park in Maputo (funded by the World Bank) was initiated under environmental planning for the Natal Free Trade Zone; and a sectoral environmental assessment for the agricultural sector investment programme was required by the Bank;

- the overview and initial environmental assessment of the PROAGRI (agricultural sector development programme) corresponds to a sector-based SEA (Chonguiça *et al*., 1998); and

- The Well-being assessment approach, using the 'barometer of sustainability' method developed by Prescott-Allen (2001), has been adopted as part of district planning. It combines an Ecosystem Well-being Index (EWI) and human indicators into a Human Well-being Index (HWI).

6.1.6 Namibia[8]

Various SEA-type activities have been undertaken in Namibia. At the highest level, an effort has been made to incorporate environmental and sustainable development issues into Namibia's second national development plan (NDP II), 2001–2006 (see Case 6.4). In addition, Vision 2030 aims to help guide the country's five-year development plans from NDP III through to NDP VII, while providing direction to government ministries, the private sector, NGOs and local authorities. This exercise embraces the idea of sustainable development and refers to tools such as EIA and SEA.

Like many countries in the region, Namibia has also initiated a number of sector and land use planning processes. These fit some of the criteria for SEA because of the levels of integration achieved, their emphasis on environmentally sustainable development, and the stated need to balance strategic thinking with more detailed project specific planning. They include the Sperrgebiet Land Use Plan (Case 6.8), the northwest Tourism Master plan and the Walvis Bay structure plan. The "*Every river*

[8] With contribution from Peter Tarr, Southern African Institute for Environmental Assessment.

has its people" project has assessed the resource use potential and development options of the Okavango River in all three basin countries (Angola, Namibia and Botswana). This study included a comprehensive analysis of socio-economic and land tenure issues, and is a good example of a basin-wide approach to development planning. Namibia's community-based natural resource management programme has also undertaken SEA-type activities. These include broad-based planning at the conservancy[9] level and more detailed tourism development planning at project level.

Perhaps the most "classic" SEA in Namibia is a study of the development of the agricultural and fisheries potential of eastern Caprivi. This began as a project-specific EIA to assess the impacts of a proposed sugar project, but soon shifted to an SEA. This change in status was prompted by an early realization that sugar was probably not the ideal crop for the area. It also became evident that the Ministry of Fisheries was planning to rehabilitate Lake Liambezi - the area originally intended for the sugar project. Whilst the study is not yet complete, it is likely that a "mixed bag" of crops will replace the original sugar proposal. The SEA will provide detailed guidelines of how each "crop project" should be implemented and how the development of infrastructure and the provision of labour should be planned (Box 6.7). `

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Box 6.7: SEA of Caprivi Sugar Project, Namibia

Background

In 1998, the Namibian government commissioned a feasibility study to investigate the possibility of developing a 10,000 ha sugar plantation and mill in Lake Liambezi area of the Caprivi Region in north-eastern Namibia. The purpose of the project was to create employment in the region, to supply sugar for domestic use and for export to countries within southern Africa. The study was optimistic about the project. But falling sugar prices, the weakening of the Namibian dollar against international currencies and various other factors prevented it from proceeding.

The Ministry of Agriculture, Water and Rural Development (MAWRD) re-examined the proposal in 2001. It hired a consortium of international and local consultants to undertake a project-level EIA. The scope of the EIA included an assessment of the projects' economic viability as well as more conventional biophysical and social impacts. The MAWRD engaged the services of the Southern African Institute for Environmental Assessment (SAIEA) to guide and review the study as an independent broker.

The Issues

After a comprehensive scoping exercise which included consultations with all the key stakeholders, both within Namibia and neighbouring countries, the major issues of concern were identified as:

- water use and the impact on the environment and downstream users (450 million m^3 per annum would be pumped out of the Zambezi River, a watercourse shared with Zambia, Botswana, Zimbabwe and Mozambique);
- the control of pests (including elephants, hippo and other wildlife);
- surface and groundwater pollution (mainly from agrochemicals and pesticides);
- land alienation (displacement of villagers in the area);
- conflicts with other land use (e.g. conservation, subsistence fisheries, subsistence crop production, small-scale cattle ranching and tourism); and

[9] A conservancy is a defined geographical area for wildlife management. The approach developed in South Africa where groups of adjacent commercial farmers removed fences to allow animals to roam freely. They agreed a constitution, a set of operating rules and criteria for distributing income from wildlife. The idea spread to Namibia and was also taken up in the communal areas of Namibia as a mechanism to provide rights to wildlife. Here a conservancy also occupies a specified area, has a defined membership (of individuals), a legal constitution and a land management plan. Some conservancies are very small; others comprise several villages.

- social and health impacts associated with the influx of workers, either foreign or from different tribes.

The study

Initially, the study strictly followed the terms of reference. But concerns over the suitability of soils in the project area and the financial viability of the project soon prompted a re-think of the approach. Both the consultant and SAIEA encouraged the proponent to take a more strategic approach, to consider crops other than sugar, and to examine areas other than Liambezi.

Moreover, it emerged that the Ministry of Fisheries and Marine Resources (MFMR) was also considering a project at Lake Liambezi which would stimulate improved subsistence fish harvesting. The lake can remain dry for years on end, filling only when the nearby River Zambezi is in high flood. With the arrival of the floods, the lake teams with fish and a short period of plenty is enjoyed by the surrounding community. The MFMR project aimed to artificially increase the "flood times" and thus extend the period when fish would be available, though still allowing the lake to become dry. The dry lake is important for seasonal crop growing and cattle grazing.

The MAWRD and the MFMR agreed that a more strategic approach was more sensible under the circumstances, and the EIA was transformed into an SEA in 2003. Important aspects are:

- investigating a variety of high value crops in various areas, especially those that will require less water and that will be less vulnerable to pests and droughts;
- examining the possibility of planting crops that can be harvested at different times, (thus providing opportunities for permanent rather than seasonal labour);
- reducing opportunity costs between the agriculture and fisheries options; and
- integrating existing farmers into the new projects.

The SEA aimed to highlight which projects were likely to be sustainable and how best synergies between the various forms of land use could be obtained.

Lessons learned to date

This case illustrates the importance of maintaining flexibility in an EA process and ensuring a healthy dialogue between the proponent, the reviewer and the consultant.

However, it would have been far more sensible to commission a SEA at the start of the process. This would have reduced the need to overcome pre-conceived ideas and entrenched positions. Nevertheless, the case shows that it is possible to "upstream" a project-level EIA.

Source: Box contributed by Peter Tarr, Southern African Institute of Environmental Assessment

Another case involved the innovative application of sustainability assessment (SA) to determining the future of the Rossing Uranium Mine. This followed a number of previous EIAs. The SA included strategic aspects and options that focused on far more than the sustainability aspects of mine operations. It compared the consequences of mine closure (scheduled for about 2008) with a scenario of extending mine operations for a further 15 years (Box 6.8). The SA was also participative, guided by a multi-stakeholder steering committee that included government agencies, NGOs, labour and company management.

A less comprehensive "SEA" was undertaken by Namibia's Ministry of Environment and Tourism in 2000. It assessed the potential for community-based tourism in the proposed Bwabwata National Park. This assessment included government, community and private sector participation. It considered the combined impacts of at least three tourist camps in the Kwando area and the use of the area by three up-market lodges adjacent to the park. The assessment remains the guiding document for the development of the campsites, which have proceeded without individual EIAs.

Box 6.8: Rössing uranium mine Sustainability Assessment

Rössing Uranium Limited (RUL) has been mining at Arandis in the Erongo Region of Namibia since 1976. Over the past 12 years the company has conducted seven EIAs on the mine and component parts of the mining process. These have all contributed to the development and continuous upgrading of its Environmental Management Plan, which includes a closure plan. The key biophysical issues relating to the mine include water use, groundwater pollution from the tailings, air quality and biodiversity loss as a result of physical disturbance to the environment. Socio-economic issues include direct and indirect employment, skills development and significant contributions to the local and national economy.

RUL is currently considering expanding the mine and thus extending its life for approximately 15 years beyond the expected closure in about 2008. In addition to technical and financial feasibility investigations, the company has taken into account the environmental, social and economic implications of mine life extension. Towards this end, RUL commissioned a sustainability assessment (SA) rather than simply doing more EIAs for the extension components. The SA was guided by a multi-stakeholder steering committee. This included government agencies, NGOs, labour and RUL management. External consultants and Rio Tinto Zinc (RTZ) experts conducted the SA.

The SA was conducted in two parts for two scenarios:

i. an initial comparative environmental assessment of the potential impacts of the expansion of the life of the mine within its footprint area, against the environmental performance of the base case (ie operation of the mine to closure in 2008); and
ii. a comparative SA of the broader implications of the base case operation against the proposed expansion of the life of the mine, including implications for the town of Arandis and the Erongo Region as well as the broader Namibian economy.

To guide the SA, the first step was the formulation of RUL's vision for sustainable development through discussions with key stakeholders and mine management: *"During its continued operation as well as following closure, RUL activities will have made a positive contribution to the ability of current and future generations in Namibia and more specifically, in Arandis and the Erongo Region, to improve their quality of life"*. This vision is also consistent with, and served to translate for local conditions, RTZ's Group Policy for Sustainable Development: *"To ensure that our businesses, operations and products contribute to the global transition to sustainable development."* (Rio Tinto SD Working Group, Nov 2000).

The project team used a cumulative environmental assessment approach to identify sustainability indicators. This included considering the compounding (synergies) of several effects: the crowding (additive effects) of potential impacts in the local area surrounding the mine, in the Erongo Region and in Namibia; and the potential for impacts to become manifest after a time lag (as opposed to immediate or short-term effects). In this way, all indirect downstream effects of the two mine development scenarios were analysed for their contribution to achieving, or reducing the ability to achieve, sustainability. The rationale for this approach was that the higher the incidence of, or significance of, cumulative negative impacts, the lower the potential for sustainability. Conversely, the higher the potential for positive cumulative effects, the higher the potential for sustainability.

Each of the two alternative development scenarios was evaluated for its sustainability performance against the agreed sustainability criteria, using the selected sustainability indicators.

The overall aim of the SA was to: (a) create awareness amongst decision-makers about the impacts of the two scenarios on sustainable development; (b) and to help them establish which scenario would contribute more to maintaining or improving natural, social and economic systems rather than just minimising environmental impacts.

The SA showed that extension of mine operations will enable RUL to significantly improve its positive legacy through a number of actions: more focused social development programmes; re-skilling the workforce and assisting people in finding alternative employment following mine closure; improving the management of mine tailings and downstream water quality monitoring; and finding ways to diversify the economic base of Arandis town.

By March 2004, a final decision on extending the mine had not been taken.

Source: Peter Tarr, pers.com.

6.1.7 Swaziland[10]

The Swaziland Environment Authority was established by the Environment Authority Act of 1992. In 2000, the Authority produced the Environmental Audit, Assessment and Review Regulations (with support from DFID). These regulations provide for both EIA and SEA, but they could not be enforced due to weaknesses in the legal framework and shortages in human resources and capacity. The Environment Management Act has recently received royal assent but has not yet been fully enacted. It will require SEAs for new legislation, regulations, policies, programmes or plans. Furthermore, it will make the Swaziland Environment Authority a 'parastatal organization'[11] with increases in human resources and skills and budget to help the organization to fulfil its mandate and objectives.

Box 6.9 lists several on-going SEA-like processes in Swaziland.

Box 6.9: Some SEA-like processes in Swaziland

- Expressions of interest have been invited to undertake the Joint Umbeluzi River Basin Study – covering Swaziland, Mozambique and to a lesser extent South Africa. The primary objective of this study is to quantify the present and future water balance in the Umbeluzi River Basin in each of the two co–basin states. It also aims to plan and/or propose future water resource development or management options so as to meet the future water demands as optimally, sustainably and equitably as possible. This nine-month study will also consider opportunities for water utilisation, conservation, basin management, and will include assessment of the social and biophysical environments.

- The country's Biodiversity Strategy and Action Plan calls for increased protection of representative examples of biodiversity. So a project was initiated in 2001 under the Southern Africa Biodiversity Support Programme to identify areas worthy of protection. Earlier surveys (1972 and 1979) identified over 30 such pristine areas vulnerable to human impacts. In 2001, the information from these surveys was updated through a desktop assessment undertaken by local ecologists. 43 areas were identified and visited. Using the World Wild Fund for Nature's rapid assessment technique, land was scored and prioritised according to the following factors:
  1) biological importance (species richness, presence of endemic species, etc.),
  2) socio-economic importance (tourist accessibility, development opportunities, local resource dependence...) and
  3) threats from: alien plants and animals; resource utilization; poaching; settlement; impending land-use changes; isolation; pollution; erosion from cattle, tracks, footpaths, etc.

- The Swaziland Biodiversity Conservation and Participatory Development Project will develop ecotourism through partnerships with businesses and communities. The heart of the project involves the development (and implementation) of Integrated Corridor Management Plans (ICMPs) through an integrated spatial development planning process (ISPP). It represents a land-use planning exercise on a large, landscape scale that takes into account both physical resources and ecological and economic processes. These ICMPs will provide the framework for land use, development and investment within each proposed Biodiversity-Tourism (B-T) Corridor.

  The objectives of ICMPs stress the conservation and sustainable use of natural resources (particularly biodiversity), ecological systems and processes, and aesthetic landscapes of the area. The ICMPs will aim to ensure environmental sustainability and positive social and local economic impacts. So they will be based on strategic environmental (including social) assessments, and on economic analysis. The latter will highlight the economic value of the land and natural resource base, and elucidate the short- and long-term trade-offs associated with various development options. Government and stakeholder commitment to these ICMPs is expected to provide an attractive environment for stimulating responsible private sector investment and leveraging other

[10] With contribution by Themb'a Mahlaba, University of Swaziland.
[11] a semi-autonomous body

government and donor support.

In practice, the B-T corridors are ecosystem planning areas in which different types of land uses at different sites all contribute in their own way to overall biodiversity conservation and natural resource management objectives. Four main land use categories are envisaged. These are based on their main role in relation to the project objectives: (i) core protected areas, (ii) tourism development zones, (iii) linkage/connection areas, and (iv) "support zones." Core protected areas (PAs) may include both existing formally-gazetted PAs and new areas under some form of community-based conservation scheme. Tourism development areas will be based on high potential for attracting tourism investment and contributing to local sustainable development. Linkage/connection areas may serve an ecological function (ensure habitat continuity, migratory pathways, etc.) and/or a tourism function (e.g. creating a suitable circuit that hikers or others can follow between tourism development "foci"). The remaining areas within the corridors will be support areas. Here, neither biodiversity conservation nor tourism development will be priority objectives; but improved natural resource management will be required to support the broader conservation and tourism objectives. Also in these support areas, communities will be able to participate in and benefit from the conservation and tourism initiatives taking place in neighbouring areas, eg by supplying goods and services to tourism facilities. Like the Spatial Development Initiatives (SDIs) pursued by Swaziland and others in the region (e.g. South Africa, Mozambique), the B-T corridors represent a vehicle for promoting coherent economic development within a spatially defined area, on a scale large enough to attract a critical mass of private sector investment.

- In 1998, the Ministry of Economic Planning initiated a system under which project proponents were required to complete a form quantifying the environmental implications. Following the end of donor funding, the system has not been pursued.

6.1.8 Tanzania[12]

There are still no comprehensive legal requirements for either EIA or SEA in mainland Tanzania, although there are specific requirements for EIA in some sectors (eg minerals). However, the Cabinet has approved a draft Environmental Management Act. This sets out the institutional arrangements for environmental management. This draft Act was expected to be submitted to Parliament for approval in 2004. Following this, regulations for EIA and SEA will be developed.

It is anticipated that the new law will include provisions for incorporating environmental assessment in national, sectoral, district and community planning processes (although there is extremely limited capacity at the latter levels) as well as requirements to undertake SEA. Formal requirements for EIA have been in place for the island of Zanzibar for several years but do not cover SEA.

Several examples of environmental assessments and planning processes in the wildlife and other sectors in Tanzania correspond to the notion of SEA or para SEA approaches. general management plans for national parks and conservation areas; and programmatic environmental assessment for road improvements.

General Management Plans for national parks and conservation areas

EIA has been extended to cover the General Management Plans (GMPs) prepared for Tanzanian national park (e.g. TANAPA Planning Unit, 1993, 1994a, 1994b). More than half of Tanzania's parks have such plans in place. These deal with issues within the parks and do not include external dimensions or all key stakeholders. EIA is also being extended to cover the general Management Zone Plans (MZPs) currently being prepared for each national park (Box 6.10) and the Board of the Tanzania

[12] With contributions by Raphael Mwalyosi, Institute of Resource Assessment, University of Dar es Salaam; and David Howlett, UNDP, Tanzania.

Box 6.10: Management Zone Planning/EIA in Tanzanian National Parks

Background

In 1994 Tanzania National Parks (TANAPA) became the first sector organisation in the country to develop its own policy and guidelines for EIA in Tanzanian National Parks. TANAPA's policy requires the preparation of an EIA for all developments and activities within and adjacent to the national park boundaries (TANAPA, 1994). The policy includes all development activities proposed by TANAPA, as well as other government agencies and private sector proponents. EIA is also being extended to cover the general Management Zone Plans (MZPs) currently being prepared for each national park. To-date such initiatives have been undertaken for Serengeti, Manyara, Kilimanjaro and Tarangire National Parks.

The MZPs have been undertaken in response to tourism development pressure in the parks, exacerbated by a politically motivated decision to construct tourist facilities in ecologically sensitive areas of the parks. These pressures have emerged in the wake of the implementation of the new national liberalisation policy, which encourages tourism and private sector development. The MZPs are intended to guide tourism infrastructure development in the parks.

The MZP/EIA process is an interdisciplinary park planning effort intended to achieve the following objectives:

- establish the park's purpose and significance;
- identify exceptional resource values and management objectives;
- prepare a management zoning scheme that identifies what can and cannot occur, with specific emphasis on development and use;
- determine the limits of acceptable use and development for the overall park and for each zone within the park; and
- assess the environmental impacts of the zoning scheme and limits of acceptance use.

Unfortunately, the above objectives focus primarily on visitor use and development and to a more limited degree on natural resources management. A full range of management objectives, which also address the integration of interests lying outside the park boundary, will be incorporated into the comprehensive General Management Plans when they are prepared at a later point in time.

The EIA Process

This cannot be considered as an EIA, as conventionally viewed. TANAPA has consistently misused the EIA Concept as a proxy for environmental review, which is intended to rationalise tourist management within the parks. As a result, the process has not involved scoping, has not determined impact significance and has not identified mitigation measures or prepared a monitoring plan. Finally, the environmental consequences of the plans have been considered in terms of positive gains as opposed to disadvantages or losses that are likely to result if the plans are not implemented. The EIAs can be criticised for several technical inadequacies:

- the planning process has lacked participation of government and other stakeholder groups;
- planning has been biased towards tourism development and its related impacts on the viability of National Parks. Ideally, it should have also considered other issues, such as those related to wildlife/natural resource management and (baseline) research;
- the planning, zoning and EIA process should have considered both the positive and negative impacts of implementing and not implementing the plan; and
- there should have been a more explicit commitment to impact mitigation and monitoring the plan - clarifying the roles of TANAPA-HQ, individual national park management teams and research. Where possible, the costs of mitigation and monitoring should have been estimated.

Because this was an environmental review rather than a conventional EIA, it is difficult and probably too early to appraise its effect on decision-making. However, the adoption of management zone planning and EIA by TANAPA has played a major role in guiding the scale and type of development activities in the country's parks.

Lessons for EIA Policy

The EIAs on the MZPs for national parks represents a form of para-SEA in Tanzania. But it would be much better if the planning process involved all the stakeholder groups.

Although MZPs/EIAs are in place in some parks, this does not guarantee its effective implementation and, hence, also not the sustained viability of the parks unless anthropogenic factors emanating from the park surroundings are also addressed and incorporated in the General Management Plan (GMP).

Source: Prepared by Raphael B.B. Mwalyosi, Institute of Resource Assessment, University of Dar es Salaam

National Parks Authority (TANAPA) has signalled that all GMPs must be subjected to an SEA. Training for park ecologists and planners has been undertaken through the Institute of Resource Assessment, University of Dar es Salaam.

The development of the Ngorongoro Conservation Area General Management Plan was undertaken over a period of almost 10 years (1987 – 1996)). The planning involved a wide range of technical studies, field surveys and censuses, assessments, workshops, and community-level meetings - all concerned with the status and management of natural resources, social and economic conditions and future development directions. The GMP was subjected to a comprehensive EIA.

Programmatic environmental assessment for road improvements

The programmatic environmental assessment (PEA) for road improvements in Tanzanian national park roads was supported jointly conceived by USAID and TANAPA and motivated by TANAPA initiative and USAID regulatory requirements (Box 6.11).

Box 6.11: SEA of road development in national parks, Tanzania

USAID is funding equipment for road improvements in several national parks and its regulations required that a programmatic environmental assessment (PEA) be undertaken. TANAPA also had its own procedures and guidelines which required an SEA for this project. So a joint PEA/SEA was undertaken. The National Environment Management Council (NEMC) became a partner in the SEA to use the case to test the draft Environmental Policy.

The PEA study considered:

- the role of roads in national parks in the future ;
- road improvement and TANAPA's efforts to enforce the 'limits of acceptable use' in park zoning with respect to road improvements;
- biodiversity conservation;
- contribution to revenues; and
- tourism development.

The process was undertaken in 2001 and began with an intensive, month-long ***scoping exercise*** to identify the significant issues to be addressed in the full assessment. This involved full consultation with all affected parties and review of the draft report. The scoping report underscored that the PEA should contribute to sounder design, construction, operation and decommissioning of roads in national parks and other protected areas; and thereby reduce potentially adverse environmental impacts and avoid the cost of correcting serious problems after the fact.

The PEA team was then selected with a mix of required skills to address the key issues: engineering, planning, ecology, EIA, etc. Due to limited time and financial resources, the ***full PEA study*** sampled physical and ecological conditions in five representative parks on the 'northern circuit'. Over four

weeks, the team assessed the impacts of 2200 km of different road types (using TANAPA's road classification system) in a range of geological, soil, meteorological, topographic and ecological conditions. The 'no roads' options were also considered.

Issues were addressed under four broad categories: physical resources, ecological systems, landscape issues and socio-economics. Matrices were developed to analyse and rank road activities against environmental and social impacts (both adverse and beneficial) during road planning and design, construction, operation and decommissioning stages. Consideration was also given to indirect, induced and cumulative impacts. Each team member was polled in a group session to obtain a ranking from high, medium or low adverse or beneficial impact for each road activity. The team members reached a consensus as a group on the rankings for each category of impact. The results of the exercise were compared with the priority issues identified by stakeholders. Mitigation measures were also developed through such consultative discussions and joint review of drafts.

Outputs of the study have included:

- a set of recommended environmental procedures to (a) screen categories of road improvements, and (b) for the environmental review of the construction, rehabilitation, realignment, operation and maintenance, and decommissioning, of roads over which TANAPA has responsibility;
- a template identifying impacts and mitigation measures;
- suggestions for alternative road design and maintenance;
- recommendations for the minimum number of members for a multi-disciplinary team;
- comments on institutional considerations; and
- preferred action recommendations.

Source: Raphael Mwalyosi: presentation at SEA workshop, Windhoek, Namibia, 15-16 May 2003

In 2003, the Office of the Vice President initiated a study, with the support of UNDP, on strategic Environment Assessment (SEA) and its potential for use in Tanzania and linkages to the poverty reduction strategy process. This study is being used in a comprehensive review of Tanzania's Poverty Reduction Strategy (PRS). The new PRS, expected in October 2004, is likely to address the integration of environment into the policy and planning making and the potential role of SEA in this.

6.1.9 Zambia[13]

In 1997, Statutory Instrument No. 28 established a framework for management of EIA in the country. The Environmental Council of Zambia (ECZ) is the focal point for management of the EIA Regulations. It has a mandate for three main functions: EIA quality control conducted within country; supervision and guidance during the environmental assessment process; and ensuring adherence to standards and regulations during the implementation and operation of projects.

There is now a fairly well developed regulatory system, which is well recognised by major stakeholders such as the mining industry and other developers. However, there is still a need to increase awareness of EIA, its role and benefits in other development sectors such as roads, tourism and industry. As a consequence, the ECZ faces an enforcement problem due to limited financial and staff resources in relation to the growing number of development projects – many of which go un-noticed with no EIA.

The ECZ was established in 1992 under the Environmental Protection and Pollution Control Act (1990), cap 204. EIA regulations were introduced in 1997 and the ECZ is developing sector guidelines for EIA reviews. There is no specific provision for SEA in the regulations although the Act

[13] With contributions from Edward Zulu, Environment Council of Zambia, and Mushimbeyi Muliya, Department of Road, Zambia.

states (Section 6, sub-section (j)) that *"the Council shall identify projects or types of projects, plans and policies for which environmental impact assessment are necessary and undertake or request others to undertake such assessments for consideration by the Council;"* Under the law, this provision can only be effected by establishing guidelines through regulations to implement it. The absence of such regulations means that SEA is not formally enforced and the mode of operation is little understood.

One initiative that approximates to an SEA is the Copperbelt Environmental Assessment. It was prepared for Zambia Consolidated Copper Mines (ZCCM) Investment Holdings Limited in February 2002 as part of an Assessment of the Copperbelt Environmental Project (CEP). The overall objective of the CEP is to address historical environmental and social liabilities arising from copper mining operation in Zambia and also to strengthen the environmental regulatory framework. The CEP was categorized as an "A" project under World Bank guidelines and thus required a full environmental assessment (EA) to be completed and disclosed prior to project appraisal. The EA identified potential impacts but did not quantify them (e.g. the footprint of a tailing dam failure and the downstream impacts on numbers of people and property is not determined). It is anticipated the detailed impacts will be addressed during the preparation of individual or consolidated environmental management plans.

Several SEA-like processes have been conducted in the tourism sector. Examples are the design of management plans for national parks (eg Lower Zambezi National Park, Kafue National Park, South and North Luangwa National Parks). The management plans aimed to ensure efficiency in the management of wildlife resources and development and management of tourism enterprises. They included environmental assessments combining aspects of land use planning and principles of project specific environmental assessments. The studies identified various land-use zones as a basis for park planning and set out goals (visions) with time frames. In addition, plans prepared for many game management areas (GMAs) surrounding national parks (where development activities may have an effect on the sustainability of parks) can be regarded as a form of para SEA (eg for GMAs surrounding the Lower Zambezi National Park and Mosi-o-Tunya National Park).

Various sectoral programmes have been subjected to environmental assessment:

- the Zambia Social Investment Programme (ZAMSIF) which comprises several sub-projects which are now being considered for EIA;
- an integrated approach is being applied to the Water Resources Action Plan (WRAP) in which environmental and social concerns are being integrated in developing the plan. This is expected to be implemented in association with communities at catchment levels; and
- a number of Action Plans have been prepared for the management of shared water bodies such as the Zambezi River Basin. The process has outlined strategic visions and goals to allow for efficient and fair management of, and access to, the use of water by member countries (mostly SADC) in the river basin.

6.1.10 Zimbabwe

The Ministry of Mines, Environment and Tourism published an EIA policy in 1994, but there are no formal requirements for SEA. However, this approach has been applied on an ad hoc basis, for example as a result of concern about the cumulative effects of expanding tourism in the area around the Victoria Falls (a designated UNESCO World Heritage Site). This issue prompted the governments of Zambia and Zimbabwe to conduct an SEA (completed in 1996), using a scenario approach, as part of efforts to prepare a Master Plan for the area (Box 6.12).

An SEA of safari and cultural tourism in and around Hwange National Park was undertaken by Spenceley (1997) as a research project. The approach relied heavily on the use of semi-structured

Box 6.12: SEA of Development Around Victoria Falls, 1996

The Victoria Falls area was designated a UNESCO World Heritage Site in 1989. In response to this, and to need to deal with the cumulative impacts of expanding tourism in the area, an SEA was commissioned by the Governments of Zambia and Zimbabwe and financed by CIDA. The IUCN Regional Office for Southern Africa (IUCN-ROSA) provided technical assistance. The objectiive was to provide information for the development of a Master Plan for the Victoria Falls area, and to prepare an outline management plan with policies, management measures, zoning, monitoring and institutional arrangements.

The focus and framework for the SEA was set by a scoping workshop attended by 50 representatives of key stakeholders. Overall guidance was provided by a Steering Committee comprising representatives of the National Heritage Conservation Committee (Zambia), the Department of the Environment (Zimbabwe), local authorities and IUCN-ROSA. The study team involved 20 experts from both countries. A comprehensive public consultation programme was organised, involving opinion surveys, workshops, "open houses" and media publicity. 150 stakeholders were involved in reviewing and commenting on the draft report and recommendations.

The SEA focused within a 30 km radius of the Falls and looked at a 10 year time horizon. Using a scenario approach, the SEA attempted to forecast the environmental (particularly cumulative) impacts from four different levels of growth in tourism (low growth to super growth). For each scenario, the methodology involved estimating adverse and beneficial impacts, calculating carrying capacities and limits to use, developing "problem trees" to show linkages between issues and concerns, charting cumulative effects, and estimating the potential loss in tourism revenue. Analysis suggested that the sustainable limits to growth lie between the low and medium growth scenarios, i.e. 500,000 - 800,000 tourists per year.

(Source: IUCN-ROSA, 1996)

interviews and questionnaire surveys with selected stakeholder target groups. Subsequently, the findings of the SEA were incorporated into the new Master Plans for the area prepared under the Town and Country Planning Act. Such master plans are prepared for sensitive areas where there is conflict over land use.

The Ministry of Environment and Tourism is currently examining policies and programmes to determine how to incorporate consideration of environmental issues. The Ministry is also implementing the District Environmental Action Programme, which requires all Districts to examine environmental opportunities and constraints.

6.2 SEA in Francophone Africa[14]

The legal provisions for SEA in developing francophone countries with some examples of practice are described in the following sections and compared in Table 6.3.

[14] With contribution by Koassi d'Almeida, Université du Québec à Montréal, UQAM)

Table 6.3: SEA in developing francophone countries

	Legal texts relating to environmental assessment	**Explicit or implicit references to strategic environmental assessment (SEA) in the legal texts relating to environmental assessment**					**National SEA procedure**	**Examples of SEAs or other studies, analyses or diagnoses, carried out beforehand with the help of aid donors**
		Draft laws, Decrees, ministerial orders or circulars	Policies	Strategies	Plans	Programmes		
Bénin	Outline Law on the Environment No 98-030, 12 February 1999				Art. 3, 6, 59, 21, 54, 87 88,		-	- Strategic environmental analysis of the humid area in south-west Benin. - Sectoral environmental assessment of tourism development, and the management and conservation of national parks and protected areas. - Prospective studies and analyses carried out in the context of national plans.
	Decree n° 95-47, 20 February 1995		Art. 2					
Burkina Faso	Environment Code, Law No 005/97/ADP, 30 January 1977						-	- Environmental assessment of the village land management programme, Phase II. - Environmental and social impact assessment of the national natural ecosystems management programme. - Sectoral assessments of the detailed draft of the EIA downstream of the Ziga dam.
	Decree No. 2001-342/PRES/PM/MEE, 17 July 2001					Art.2		
	Decree No 2002-542 PRES/PM/MECV, 27 November 2002	Art.2						
Côte d'Ivoire	Environment Code, Law No 96-766, 3 October 1996		Art.35		Art.35		-	- Strategic environmental assessment of the coastal management programme
Cameroon	Outline Law No 96/12, 8 August 1996, relating to management of the environment				Art. 14		-	
Djibouti	Outline Law on the Environment, Law No. 106/AN/00/4e L		Art. 52, 53				-	
Guinea – Conakry	Environment Code, Order No045/ PRG/87/SGG, 28 May 1987. Decree No 199/PRG/SGG/89, 8 November 1989, codifying EIAs						-	- Strategic environmental assessment of the transport sector
	Law No. 90.033, 21 December 1990, Environment Charter							- Environmental assessment of the transport sector.

Madagascar	Decree (MECIE) No 99-945, 15 December 1999.		Annexe 1		Annexe 1		-	- Environmental assessment of the development plan for areas set aside for tourism and eco-tourism. - Regional environmental assessment (REA) of the Anosy region.
Mali	Law No. 91-04/ AN-RM, 23 February 1991, relating to protection of the environment and living conditions							
	Decree No. 99-189, 5 July 1999					One of the objectives of the Decree		
	Order No. 98-027/P-RM, 25 August 1998		Art. 2		Art. 2			
Morocco	Law on environmental protection							Sectoral environmental assessment of agriculture
Niger	Law No 98-56, 29 December 1998 (outline law governing management of the environment)					Art. 31		Assessments of the national poverty alleviation strategy and the community action plan (*plan d'action communautaire* / PAC).
	Order of 10 January 1997, institutionalising EIAs.					Art. 4		
Sénégal	Law No. 2001-01, 15 January 2001 (the Environment Code)		Art. 48		Art. 48			
Togo	Law No. 88-14, 3 November 1988 (the Environment Code)	Art. 4						
Tunisia	Decree No 91-362, 13 March 1991 relating to EIAs							
	Law No. 88-91, 2August 1988, creating a National Environmental Protection Agency							
	Law No 88-20, 13 April 1988, revising the Forestry Code							

Source: d'Almeida (2003)

6.2.1 Benin

A number of elements of environmental legislation in Benin make reference to SEA. For example several articles in the O*utline Law on the Environment* (Articles 3, 6, 21, 54, 59, 87, 88 of Law No. 98-030 of 12 February 1999) provide for environmental assessment of policies, sectoral strategies, plans and programmes, either implicitly or explicitly.

The Benin Environment Agency (Agence Béninoise pour l'Environnement / ABE) is responsible to ensuring that environmental considerations are included in sectoral policies and/or strategies. The Outline Law on the Environment provides for the establishment of Environmental Cells (administrative units) in the various ministries and in each prefecture and *département*, to act as an interface between the ABE and public and private promoters who carry out development programmes and projects. Their purpose is "to ensure that environmental dimensions are included in development policies and programmes in its ministerial sector or on the territory of the *département* concerned".

But it is not clear whether any SEAs have actually been undertaken under these laws and whether the Environment Cells are functioning.

Some SEAs were undertaken in Benin prior to this legislation, conducted as part of programmes funded by donor agencies. They took the form of strategic environmental analyses (*analyse stratégique de l'environnement* / *ASE*) or sectoral environmental assessments, eg:

- a strategic environmental analysis of several *départements* in the humid region in the south-west of the country; and
- sectoral environmental assessments of tourism development, and the management and conservation of national parks and protected areas.

Also, a number of studies, analyses and diagnoses were conducted as part of the preparation of national plans which often took environmental issues into account.

6.2.2 Burkina Faso

Provisions for environmental impact assessment in Burkina Faso are set out in Article 17 of Law No. 005/97/ ADP, 30 January 1997, which instituted the environmental code. References to environmental assessments of policies and programmes are made in different pieces of legislation: Decree n° 2001- 342 /PRES/PM/MEE, 17 July 2001; and Article 2 of Decree n° 2002-542 PRES/PM/MECV, 27 November 2002

The institutional and regulatory framework for environmental assessment in Burkina Faso is not yet fully operational, but some SEAs have been undertaken in the context of programmes funded by aid donors:

- an environmental assessment of the national village land management programme (*programme national de gestion des terroirs*), Phase II;
- an environmental and social impact assessment of the national natural ecosystems management programme (*programme national de gestion des écosystèmes naturels*);
- sectoral assessments of the detailed preliminary draft of the EIA of the area downstream of the Ziga dam;
- programme to rehabilitate small dams on the central plateau;
- sectoral support programme for transport (phase II); and
- decennial plan for basic education.

6.2.3 Côte d'Ivoire

Article 35 of Law No. 96-766, 3 October 1996, instituted the Environment Code and states that any major project, programme or plan likely to have an impact on the environment must be subject to a prior impact assessment (Djeri-Allassani, 2001).

No precise framework for implementing SEA has yet been established, but a procedure for carrying out an SEA for the coastal management programme has proposed (Box 6.13).

Box 6.13: Proposed procedure for an SEA of the coastal management programme (Côte d'Ivoire)

- Prepare environmental profile of the coastal area.
- Determine main development options.
- Identify environmental issues associated with development programmes.
- Identify all concerned stakeholders in the coastal area.
- Develop an environmental protection strategy.
- Include strategic analysis in the policy document for the development of the coastal area.

Source: N'dah Etien (2002)

6.2.4 Madagascar

Regulatory provisions for SEA are contained in Law No. 90.033, 21 December 1990 (the Environmental Charter) which sets out the general framework for implementing environmental policy in Madagascar. The Charter was amended and added to in 1997.

Decree No 99-945, 15 December 1999, was intended to ensure compatibility between investment and the environment (*Mise en Comptabilité des Investissements avec l'Environnement / MECIE*). In effect, it implements Article 10 of the Environmental Charter. Annex 1 of the MECIE Decree states that "any PPP likely to modify the natural environment or the use of natural resources and/or the quality of the human environment in the urban and/or rural setting shall be subject to an environmental impact assessment".

Prior to this Decree, some sectoral and regional environmental assessments had already been conducted with the support of aid donors, e.g. (see Table 6.4):

- environmental assessment of the transport sector, carried out in accordance with the World Bank's Operational Directives 4.01;
- environmental assessment of the development plan for areas set aside for tourism and eco-tourism - an initiative of the Ministry for Tourism and supported by USAID;
- environmental assessment of the mining sector, carried out with support from the World Bank;
- regional environmental assessment of the Anosy area, with support from the World Bank, USAID and QMM (Qit Madagascar Minerals);
- evaluation of the current environment programme, supported by the World Bank;
- evaluation of the energy sector, supported by the World Bank; and
- evaluation of the rural development support programme.

Table 6.4: SEAs carried out in Madagascar
Source : Andrianaivomahefa (2001)

	Transport sector	**Tourism sector**	**Mining sector**	**Regional EA**
Subject	The whole sector	Area of interest: eco-tourism	Study area: pilot studies	Regional development scheme
Approaches	1. Diagnosis of the sector; 2. General impacts 3. Environmental management plan	EIA of the development plan of the Isalo Eco-tourism interest area)	1. Basic study 2. Environmental audits 3. Social/economic impacts	1. Integration of rural development scheme and REA 2. Ilmenite project
Results	1. Institution 2. Legislation 3. Training 4. Physical projects	In progress	General and global measures	In progress: scenarios
Aid donors	World Bank	Ministry for Tourism /USAID	Mining sector reform project / World Bank	World Bank/ USAID/ Qit Madagascar Minerals
Special issues	Coordination of sectors	EIA of eco-tourism projects	1. Methodology 2. Reform of the sector and environmental actors	1. Methodology 2. Regional/local scales 3. Harmonisation of information and observation units

6.2.5 Morocco

There are no legal provisions covering SEA, but a number of such assessments have been carried out. An example is the sectoral environmental assessment for agriculture undertaken by the Moroccan government and the World Bank in relation to an irrigation project. The aim of this study was to include environmental issues in the development of the whole of the irrigation sector (Box 6.14)

Box 6.14: Sectoral environmental assessment of Moroccan agriculture

Procedure:
- Assessment of the long-term implications of investment for the whole sector (from the point of view of operations and maintenance, as well as the institutional, legal and regulatory factors).
- Proposal for a management framework based on the development of environmental units covering irrigation at national and district levels.

Result:
- The various actors involved were made more aware of the diversity and complexity of the environmental issues in this sector.

Recommendation :
- Creation of new institutions with responsibility for formulating policy and strategies, environmental monitoring and training, and preparing new legislation to improve overall management and performance in the sector.

Source: André *et al*. (2003)

6.2.6 Senegal

Article 48 of Law No 2001-01, 15 January 2001 (the Environment Code) covers the use of environmental assessment and stipulates it that shall also apply to policies, plans, programmes, and to regional and sectoral studies.

A preliminary EIA (PEIA) was undertaken for the programme of revitalisation of "fossilised" valleys in Northern Senegal. The programme encompassed 3000 km of six watercourses experiencing drought, salinisation and/or burial under eroded materials. The PEIA was primarily used to identify the notification, compensation and monitoring measures necessary to implement the programme rather than to review options (Bitondo *et al*., 1977).

Box 6.15 described EA work undertaken for Senegal's transport sector.

Box 6.15: Environmental assessment of the Second Transport Sector Programme (PST II), Senegal

As part of the long- and medium-term structural adjustment programme for Senegal, donors and the government have agreed on the need to implement appropriate measures to enable the transport infrastructure sector to support production. As a foundation, a transport sector policy document has been prepared. In anticipation of implementing the Second Transport Sectoral Project (PST II), the government commissioned a diagnostic study to defined new orientations for transport in May 1997.

This study was conducted by a group of national experts and an international consultant. It aimed to provide a framework for project implementation as well as guidance for the four sub sectors of the PST II (roads, fluvio-maritime, rail and air), complying with the quality security and environmental protection standards. The study also aimed to guide the assessment of environmental impacts. Its main objectives were to:

- evaluate the government's environmental policy;
- define the regulatory, legal and organisational frameworks through which the EA should be conducted;
- systematically assess the different ecological, economic and socio economic impacts of transport infrastructure, and the mitigation or cost of identified impacts; and
- propose an environmental monitoring plan and a strategy for the implementing EIA in the transport sector.

An extensive review was undertaken of survey documents prepared for the transport sectoral adjustment programme. Interviews and discussions were held with the partners, the public and different transport user groups. These led to the preparation of proposals for an overall environmental and social management programme for the transport infrastructure sector.

The study was expected to:

- provide information and raise awareness of the principles and role of environmental assessment amongst decision makers, partners and transport users;
- enable the efficient enforcement of legislation and operational guidelines; and
- promote the systematic implementation of EIA for all transport activities and infrastructure that are likely to have adverse environmental impacts.

Contributed by Abdoulaye Sene, Dakar

6.2.7 Other countries

A number of other countries have limited experience of SEA; and some have outline environmental legislation that provides for use of environmental assessment at the level of PPPs. But the extent of implementation is unclear.

- ***Cameroon –*** the Environment Department is required to ensure that that environmental considerations are taken into account in all economic, energy-related, land-tenure and other plans and programmes (Djeri-Allassani, 2001).

- ***Djibouti*** - SEA is required in two circumstances: (a) planning in relation to a sector or industry; and (b) whenever a large-scale project is likely to affect important aspects of the environmental balance - water resources, desertification, natural resources, population, etc.".

- ***Guinea–Conakry*** – there is no provision for SEA in the environmental legislation of Guinea. However, an SEA has been performed in the transport sector and, in 2002, an SEA was undertaken of the 1992 forest management plan for Sangareya Bay – an area dominated by mangroves. The latter involved a review of the existing situation; observations and enquiries in a case study site; stakeholder consultations; and analysis and discussion of the outcomes of the plan (Samoura *et al*. 2003).

- ***Mali*** has no specific reference to SEA, but the legislation states that one of the objectives of EIA is to "assess and guard against the environmental risks associated with development projects and programmes" (Keita, 2001). The National Office for the Restoration and Control of Pollution and Environmental Damage (*Direction nationale de l'assainissement et du contrôle des pollutions et des nuisances*) has responsibility "to monitor and ensure that sectoral policies and development plans and programmes take into account environmental issues and the implementation of measures [to protect the environment]".

- ***Niger*** - no precise SEA framework, but several SEAs have been undertaken, eg, assessments of the national poverty alleviation strategy and the community action plan (*plan d'action communautaire* / PAC).

- ***Togo –*** no operational SEA framework, but there is legal provision for a process of environmental assessment of draft laws, decrees, ministerial orders or circulars of a regulatory nature which have to do, directly or indirectly, with the general interests declared by the Environmental Code. The Code declares the following areas to be of general interest (Djeri-Allassani, 2001):
    - conservation of the environment;
    - maintenance or restoration of the natural resources supporting human life;
    - prevention or limitation of activities likely to degrade the environment and prejudice people's health or property; and reparation or compensation for environment damage.

6.3 SEA in the rest of sub-Saharan Africa

6.3.1 Nile Basin

Under the Nile Basin Initiative, launched in 1999, a transboundary environmental assessment (TEA) was undertaken by riparian countries. It addressed basin-wide environmental trends, threats and priorities and outlined the elements for a long-term agenda for environmental action for the Nile Basin (NBI 2001) (see Case 6.6). The TEA also mapped the spatial extent and relative severity of major threats, linking them to immediate, proximate and underlying causes. From an SEA perspective, it may be represented as a large-scale regional assessment undertaken as part of cooperative river basin management in support of sustainable development.

6.3.2 Cape Verde

The EIA legislation in force in Cape Verde includes requirements for the environmental assessment of plans and programmes. However SEA is still lacking specific regulations and no practical experience has yet been developed, although initial training courses have been conducted under the initiative of the Ministry of Environment.

6.3.3 Ghana

In 1997, SEA was applied to a US $800 million village infrastructure project (Amoyaw-Osei 1997) encompassing rural water, transport, and post-harvest infrastructure, as well as institutional strengthening. The SEA was undertaken by a Ghananian consultant with assistance from the Ghanaian Environmental Protection Agency. Recently, Ghana has initiated an SEA on its poverty reduction strategy with assistance from The Netherlands and the UK's DFID (Box 6.16). This is one of the first SEAs of such a strategy and promises to yield valuable methodological lessons.

Box 6.16: SEA of Ghana's Poverty Reduction Strategy

The Ghana Poverty Reduction Strategy (GPRS) was published by the government in February 2002. It covers the period 2002-2004 during which it will be subject to review and monitoring.

The GPRS identifies environmental degradation as a contributory cause of poverty. It also refers to the need for EIAs and audits to ensure that growth arising from the GPRS is environmentally sustainable. However, overall, the GPRS treats the environment as a sectoral or "add on" matter rather than a cross-cutting issue. Consequently the environmental impacts of the policies and strategies for delivering growth and poverty reduction highlighted in the GPRS are not considered or are poorly understood. This is problematic since many of the policies will have significant environmental impacts. In some instances, lack of focus on environmental management issues will affect the efficacy of the GPRS to deliver sustainable economic growth and poverty reduction.

In many instances, poor environmental quality and management is an important but often neglected factor contributing to poverty. By ignoring the poverty-environment linkage, the poverty reduction goal of the GPRS could be significantly hampered.

The Ministry of Environment and Science therefore decided to carry out an SEA so that the GPRS could be adjusted. The SEA aimed to assess the environmental risks and opportunities represented by the policies encompassed by the GPRS, and to identify appropriate management/mitigation measures to

ensure that sound environmental management contributes towards pro-poor sustainable growth and poverty reduction in Ghana.

The SEA was led by the National Development Planning Commission and Environmental Protection Agency (EPA) and undertaken in collaboration with DFID and the Royal Netherlands Embassy in Accra. The first phase was to raise awareness and generate buy-in at senior level from key ministries. The SEA was initiated in June 2002 when a scoping exercise was undertaken by the Dutch EIA Commission on behalf of the EPA. The following stepped approach was recommended:

- ***Step 1***: Screen the policy lines and interventions stated in the GPRS for their impacts on the environment functions poor people depend on, either directly or indirectly;
- ***Step 2***: Analyse the scope offered by the environment for new policy, or the 'environmental space'. Identify which threshold values must not be exceeded because this would lead to irreversible impacts on poor people; and what opportunities environmental measures present for reducing poverty;
- ***Step 3***: Place the proposed policy within this 'environmental space'. Seek 'environmentally friendly and poverty-reducing alternatives' where critical thresholds are exceeded. If any opportunities remain, see whether these can still be included in the strategy;
- ***Step 4***: Attempt to secure as much commitment to the SEA as possible from all the actors concerned by jointly identifying the relations between the environment and poverty reduction.

A pilot study of the GPRS was undertaken in February-April 2003, and the full SEA commenced on 1st May 2003. In addition to reviewing the GPRS through national sector studies, active participation of stakeholders has led to greater emphasis on the role of SEA in improving the processes whereby the policies themselves are translated into budgets, programmes and activities. This is where the failure to address environmental, social, cultural and micro-economic shortcomings of policies is thought to be most acute. The SEA team initiated sustainability appraisals of all 110 District Assembly Medium Term Development Plans - the principal vehicles for implementing the GPRS. Findings of the District Plan appraisals were to be combined with the results of the national level policy review to expose gaps and inconsistencies and develop improved procedures for ensuring that funds reach their intended targets; the poor, vulnerable and excluded.

Sources: Jean Paul Penrose, DFID (pers. comm.), Netherlands CEIA (2003) and Nelson (2003)

6.3.3 Uganda

In Uganda, SEA-type approaches are beginning to be used in development planning and policy-making. A notable example is in the processes to revise the Poverty Eradication Action Plan (Box 6.17).

Box 6.17: Use of SEA-type approaches to inform the development of the Poverty Eradication Action Plan, Uganda

There has been a gradual introduction of SEA-type approaches during the development of the Poverty Eradication Action Plan (PEAP) in Uganda. The first PEAP was developed in 1996 when it became clear that poor people themselves had not been involved. A short consultation with the poor resulted in a major shift of approach and the development of UPPAP (the Uganda Participatory Poverty Assessment Project), funded by DFID and the World Bank. The project was undertaken over a two year period under the auspices of the Ministry of Finance Planning and Economic Development (MFPED). It involved a series of Participatory Poverty Assessments (PPA1) in 36 sites in 9 districts.

The PEAP was officially launched in 1997. A first revision was prepared in 1999 and was informed substantially by the finding of UPPAP and other initiatives such as the Plan for Modernisation of Agriculture (PMA). One of the major impacts of UPPAP was the shift in the definition of poverty - from a purely income-based one, to being based on characteristics defined by the poor themselves,

including their relationship with the environment.

As a result, it was recognised that environment issues had to be better reflected in the revised PEAP. DFID funded national and international consultants to assist the Ugandan National Environment Management Authority (NEMA) to strengthen its engagement in the drafting process. This involved articulating poverty-environment linkages and lobbying those leading the process. The aim was to strengthen integration into the PEAP of environmental and long-term sustainability considerations, and to improve the achievement and sustainability of the intended outcomes. This marked a major shift in the government's approach. It was the first time that environment issues had been addressed and integrated in the planning and development phases of national policy.

In late 1999, the Plan for Modernisation of Agriculture (PMA) also began to take shape. A national consultant made recommendations on how environment concerns could be reflected better in the development of this programme.

In early 2001, a second set of national participatory poverty assessments (PPA2) were designed under the UPPAP-2 project. These included specific case studies to examine, in greater depth, a number of key areas that had emerged and had remained unexplored from first set of assessments. One of these areas was the environment; and DFID supported a specific Participatory Poverty and Environment Assessment (PPEA) case study. It was carried out in three phases:

Phase 1. A desk-based ***literature review*** of the nine district reports from PPA1 to identify unexplored environmental issues. It was seen as critical for the researchers to undertake ***consultations with key policy-makers*** across government at this early stage, to further identify knowledge gaps concerning environment-poverty links. A specific environment-focused ***field manual*** was developed, drawing from the desk research and experience of the researchers. Key to its design was ensuring that all aspects of the environment were captured (including provision of environmental services such as water and sanitation, energy, waste management) and not just natural resource sub-sectors.

Phase 2. Collection of ***primary data*** using participatory tools and methodologies. A ***field guide*** was developed for collecting information and exploring environmental change issues through tailored participatory approaches. The aim of this approach was to establish, from the perspective of the poor themselves, how they perceived their environment to be changing, how they interacted with their environment and how, if at all, it impacted on their well-being. The findings were then analysed and a range of reports produced: individual case studies, consolidated policy analysis, and specific sector briefing papers.

Phase 3. Assimilating and crystallising the findings of the PPEA into clear ***sector specific policy briefs*** – essential for targeting specific audiences and ensuring that key policy-makers were not overwhelmed with unnecessary information.

A second revision of the PEAP is currently underway. It is informed substantially by the outcomes of UPPAP2 (including the PPEA). Much emphasis has been placed on the design of the revision process in order to ensure wide participation of all key stakeholders as well as the effective inclusion of cross-cutting issues in the revised PEAP. This has meant the establishment of cross-cutting issues (CCI) teams comprising environment, gender, HIV and poverty specialists to sit on each of the pillar revision teams (currently 4 pillar teams).

CCI teams are expected to play a key role in assessing the wider impact of proposed policies on other government strategies and programmes. This approach is expected to have several outcomes:

- Better recognition of the positive returns (in terms of economic growth and poverty reduction) on government investments in the environment;
- minimisation of the negative environmental impacts of the proposed PEAP; and
- general integration of environmental sustainability into all PEAP objectives.

Source: Based on an internal report prepared by Claire Ireland, Department for International Development, UK

6.4 SEA in the Latin America and the Caribbean

Most of the Latin America and Caribbean countries have legal and administrative systems to deal with EIA, some of them dating from the mid 1970s. A study undertaken by the Inter-American Development Bank covering 26 countries in the region indicates that almost all include environmental criteria for project review and authorisation, and over three quarters have enacted regulations regarding environmental assessment (Brito and Verocai 2002). But these regulations are only weakly enforced due to lack of resources and government attention being focused on other matters (eg pressing social problems). All countries (except the Bahamas and Surinam) have now implemented some form of EIA system and, in a few countries, these are decentralised to regional and local levels (eg Argentina, Brazil, Chile, Colombia and Bolivia). But overall, the quality of EA studies is poor (Alzina & Spinosa 2001).

There has been very limited domestic application of SEA to date in the region. Most SEAs have been led by international organizations operating in the region (eg Inter-American Development Bank, World Bank – see Box 6.18), with the outstanding exception of the *Avança Brasil* case in Brazil, the urban territorial plans in Chile and the telephone network in Guatemala (see country descriptions below).

Box 6.18: Examples of SEAs in Latin America and the Caribbean led by the Inter-American Development Bank and the World Bank

Inter-American Development Bank

- Bolivia: Corredor de integracion Santa Cruz – Puerto Suarez, 1st Phase (Box 6.19);
- Brazil: Programa de Transporte Urbano de Forzaeiza;
- Peru: Renovación Urbana del Cenro de Lima;
- Colombia: Programa de Vivienda Social;
- Trindad & Tobago: National Settlements Programme, Second Stage;
- Ecuador: Programa del Desarrollo Sostenible de la Frontera Amazonica Norta de Ecuador;
- Regional: Programa de Apoyo al Plan de Ación para la Integración de la Infrastructura Regional en América;
- Brazil: Tourism Development Programme in Northeastern Brazil, 2nd stage (PRODETUR/NE-II);
- Brazil: Programa vial de Santa Catarina, Cuarta stapa;
- Brazil: Desarrollo Sostenible de Acra.

World Bank

- Water sector Modernisation: Colombia, Argentina, Mexico (ongoing), Brazil;
- Power sector: Colombia, El Salvador, Ecuador, Brazil (planned as part of PSAL);
- Transport: Bolivia, Guatemala (rural roads), Colombia (transportation corridor; and low income regional roads);
- Water resources: Brazil (Ceara, Bahia);
- Flood protection: Argentina;
- Gas sector: Bolivia-Brazil gas pipeline: SEA of gas exploration/exploitation;
- Regulations and legislative bills: Dominican Republic, Ecuador;
- Development plans: Panama Metropolitan Plan, Bogota's Land Use Plan;
- Sectoral programmes: (e.g. IADB and IBRD);
- Sectoral/regional EAs: Dominican Republic's tourism centres;
- Cumulative impact assessments: Cartagena water, sewerage and environmental management project.

Process components

Most SEAs covered the same range of components: scoping; baseline studies; regulatory framework; identification of impacts and cumulative effects; environmental externalities; analysis of alternatives; description of alternative policies, plans and programmes; impact mitigation plans; strengthening of environmental institutions; promotion of public participation; and monitoring and follow-up.

Source: Triana and Quintero, 2003.

However, SEA-type assessments have been undertaken as part of integrated planning. For example, with support from UNEP and the Organisation of American States, an environmental assessment was undertaken in 1995-96, It was part of preparations for an environmental management initiative under the Binational Master Plan for Integral Development of the Lake Titicaca, Desaguedero River, Poopó, Coipasa Salt Marsh System (TDPS System), drawn up by the governments of Bolivia and Peru. This study covered a broad array of issues from climate, water use and pollution to ecosystems, soils, and development considerations (eg agriculture, fisheries, tourism).

Triana and Quintero (2003) note that SEA is beginning to be used as an administrative procedure within environmental policy instruments in the region: command and control instruments (eg standards); economic instruments (eg fees and pollution taxes); legal mechanisms; and mediation (eg of conflicts). They also cite various positive outcomes from the application of SEA in the region:

- improvements in environmental regulations (Argentina, Colombia, Panama, Dominican Republic);
- improvements in EIA systems ((Brazil, Colombia, Ecuador);
- clarification of environmental responsibilities for private sector participation (Colombia, Argentina);
- promoted preparation of government sectoral environmental guidelines (Colombia, Bolivia, Argentina, Brazil and others);
- institutional strengthening; and
- establishment of government task forces for SEAs (Brazil, Chile, Colombia).

6.4.1 Bolivia

There are no specific legal requirements or institutional framework for SEA. But several SEAs have been undertaken as initiatives of the Inter-American Development Bank:

- Bolivia-Brazil gas pipeline project;
- Santa Cruz-Porto Suarez Road - looks at development opportunities and produced a management plan covering a vast area (Box 6.19);
- Corridor La Paz – Guayaramerín – Conija - currently at the initiation stage.

In the 1990s, the World Bank has collaborated with the National Secretary for the Environment to sponsor a sectoral EA for mining to assist institutional strengthening.

Box 6.19: SEA of Santa Cruz – Suarez Road, Bolivia

The SEA of the Santa Cruz - Porto Suarez Road has evolved to address the development of a major regional plan covering the whole area (where impacts can be expected as a consequence of the construction of this highway). The impacts of the proposed road were analysed in relation to a set of alternative regional development scenarios (setting out development opportunities, but dominated by an economic perspective). One of the main outcomes was a management plan covering the whole area and providing for the monitoring and minimisation of the expected impacts.

Source: Maria Partidarion, Pers.com.

6.4.2 Brazil [15]

SEA has not yet been introduced formally in Brazilian federal legislation. But a bill has been presented by a Deputy. Some practitioners believe that mandatory SEA will only lead to an overload of SEA reports (Paulo Eglar, pers.com.). A decree requiring SEA of plans and programmes was issued in the State of São Paulo in 1986, but is not implemented.

Recently, the IADB requested an SEA (effectively a large scale EIA) for the natural gas pipeline between Brazil and Bolivia. The assessment covered both countries and focused primarily on the cumulative and long-term impacts of the associated projects that will be fostered by the availability of natural gas in the region.

At the moment, most SEA initiatives in Brazil are led either by the national government (Ministries of the Environment, Planning, Transports and Energy), by the National Development Bank (BNDES) and the National Oil Agency; at state level by the State Environment Agencies in Sao Paulo and Rio de Janeiro; and also by Universities and private companies such as Petrobrás and Electrobrás.

During the last five years, SEA has been undertaken as a requirement of international development banks such as the Inter-American Development Bank (IADB) and the World Bank. Examples include SEAs for sectoral programmes such as the Water & Sanitation Programme (World Bank, 1997) and the Transportation Programme for the Southern Corridor of Brazil (1996). The IADB is currently leading an SEA of the Catchment Area Plan of the Tocantins and the Araguaia rivers. It has also indicated that an SEA weill be required for a loan in support of a tourism development plan in the Northeast Region of Brazil. Another SEA initiative, undertaken with the support of the Inter-American Development Bank, is connected to the Programme for the Rehabilitation of Downtown Sao Paulo, executed by the Municipal Company of Urbanism (Box 6.20).

There are several notable initiatives at State level:

- the LIMA / COPPE - Federal University of Rio de Janeiro SEA of the Development Plans for the Production, Transport and Utilization of Oil and Natural Gas in the southern coastal area of Bahia State (in progress);
- the SEA of the Indicative Plan of the Expansion of the Electric Sector - a research project developed by the CEPEL (Centre of Research for Electric Energy) which proposed an approach to SEA (concluded in 2000);

[15] With contribution from Paulo Egler, Brazilian Academy of Sciences

- SEA of the Natural Gas infrastructure (PhD study, concluded in 2001, State University of Mato Grosso do Sul,);
- the Sao Paulo Municipality EIA of the bus urban track programme - an integrated project assessment approach was adopted.

Box 6.20: SEA of Programme for the Rehabilitation of Dowtown Sao Paulo, Brazil

The SEA is an integral part of the development of the programme and aims to provide for its "greening". It and addresses four key areas:

- the programme's global environmental sustainability (related to urban environmental policies);
- the sustainability of individual projects;
- the environmental viability of individual projects; and
- the sustainability of the programme's environmental procedures (linked to environmental management systems).

Key elements in the strategic approach adopted by the programme and the SEA process include:

- a vision on the development of Sao Paulo;
- engagement of three local players (private sector, community and public sector);
- identification of common global and sectoral issues; and
- establishment of an environmental policy and strategy for the municipality (including strategic objectives and the establishment of development scenarios).

Source: Information provided by Arcindo dos Santos, Social Programmes Division SO1 (IADB)

6.4.3 Chile

Although there is no legal requirement for SEA, there is growing interest in its potential, stimulated by realisation of the limitations of current EIA practice and methods when applied to strategic initiatives. Some examples of SEA application and the potential and challenges to introducing SEA in Chile are discussed in Box 6.21.

Box 6.21: Challenges to introducing SEA in Chile

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EA legislation

Environmental assessment in Chile is regulated by the General Environment Framework Law of 1994 (Ley 19.300), and by the EIA System Regulation of 1997. Section 3(h) of Ley 19.300 requires that certain land-use planning instruments (Instrumentos de Planificación Territorial - IPTs) be subject to the EIA system (CONAMA undated-K:3) - in particular regional plans for urban development and inter-district, district zoning, and sectional plans,. As a result, since 1997, almost 200 plans have been subject to EIA..

Potential moves towards SEA

In recent years there have been attempts to improve the integration of environmental concerns into planning instruments. Examples include coastal zone management plans, IPTs, river basin plans, sustainability planning, all of which can contribute to the foundations of SEA in Chile.

A notable example of the application of strategic assessment in Chile is that of the forthcoming trade agreement with the European Union (Blanco, in press). The Ministry of Public Works, Transport and

Telecommunications has been studying potential applications of SEA. It has undertaken pilot studies on water management plans together with other government agencies. It is also exploring SEA methods for the transport plan of Santiago de Chile. Like other Latin American countries, Chile is also influenced by the requests and the guidance of international funding agencies. In the late 1990s the World Bank began negotiations for a river-basin management programme (DGA 1998) and requested that sectoral and regional EAs be applied (DGA/MOPTT/World Bank 2002).

Challenges

These initial experiences, together with the application of EIA to urban plans, have also raised important questions about existing policy-making and planning mechanisms. As in many other countries, the normative and hierarchical ideal of 'PPPs' (policies, plans and programmes) is rarely encountered in Chile. More often, implicit strategic decisions appear to be taken and mega-projects initiated which do not conform with existing strategies or policies; and their implications for development, and sustainability in particular, can be far-reaching and long-term. Hence, it will be crucial to identify the most important, and urgent, types of initiatives that will benefit from SEA.

There is debate on the role of SEA and testing of approaches. But this is hampered by slow progress in key sectoral institutions to integrate environmental considerations in their work and decisions. This is particularly important since the main environmental institution, the Comisión Nacional del Medio Ambiente (CONAMA), delegates responsibilities for environmental management to sectoral agencies. There is a particular need to emphasise the development of policies for natural resource management and to strengthen public participation.

In 1998, the environmental policy for sustainable development was approved (CONAMA 1998). It calls for the production of 'environmentally sustainable policies', and the harmonization of environmental, economic and social policies; and for the strengthening of environmental institutions, including the responsibility of all public organisations to integrate environmental sustainability principles in their respective sectors.

A document posted on CONAMA's website draws a link between the above requirements, its own coordination role and the purpose of SEA (CONAMA, undated). It describes SEA as an 'appropriate instrument' for the 'definition and implementation of procedures which can strengthen the establishment of environmentally sustainable sectoral policies'. It also recognises the 'preventive' nature of SEA, and considers this of growing importance in the pursuit of sustainable development. The existence of different approaches to SEA is recognised. But it is stressed that Chile 'must create its own instrument of SEA' and that, although attention should be given to international experience, 'there is the liberty to shape an instrument that is appropriate for our reality'.

Progress in applying a new SEA instrument will depend on overcoming the prevailing culture of using EIA in a mechanistic and technocratic way

Source: Olivia Bina, University of Cambridge (pers.com.)

6.4.4 Dominican Republic

The General Law on Environment and Natural Resources (No. 64-00), 2000, established the Department of Environment and Natural Resources (DENR). Article 38 introduces strategic environmental evaluation as an available assessment instrument, and Article 39 stipulates that policies, plans and programmes of public administration be evaluated in terms of the environmental effects and the alternative of least negative impact must be selected. The DENR will issue directives for evaluations and approve/supervise compliance with their recommendations. It is not clear if any such applications have been undertaken.

6.4.5 Guatemala

Guatemala has adopted new Regulations on Environmental Assessment, Control and Follow-up (Acuerdo Gubernativo nº 23-2003 of 27 January, in force after April 2003). These cover the use of a range of tools: SEA, initial environmental assessment, EIA, risk assessment, social impact assessment and cumulative effects assessment. Article sets the scope of SEA: it applies to policies, national and governmental plans, and projects of transnational relevance that imply the generation of economic and social development patterns with potential environmental impacts.

According to Triana and Quintero (2003), since 1997, proponents have undertaken 15 EIAs for different projects in the telephone sector (including for transmission towers, cells, telephone cabins, operational central, etc.) which appear to have included elements of SEA by using an integrated project approach.

6.5 SEA in Asia

Most Asian countries have established EIA processes and some now have considerable experience with EIA. The early focus was on controlling pollution and restricting industrial development that was clearly detrimental to human health and the natural environment. Increasingly EIAs are examining a broader range of environmental, social, economic and cultural issues and reportedly are becoming more participatory processes.

According to Naim (2002), most countries in south and south east Asia have the infrastructure in place to make SEA work:

> "In fact, many SEA 'look alike' activities have already taken place, for example, as part of Nepal's forest plan, Pakistan's water and drainage programmes, Sri Lanka's city and tourism plans, and National Conservation Strategy development in many countries. Some countries would like to try out SEA in energy, water and forest sector planning, but no follow-up has occurred because of lack of funds. Most recently, the Vietnamese Transport Ministry has proposed to use SEA on a pilot scale for three provinces".

On a regional level, The Environment Programme of the Mekong River Commission (MRC)[16] is focusing on aspects of environmental assessment systems, including related areas such as SEA, cumulative environmental assessment (CEA) and EIA. It is examining how transboundary impacts can be accounted for and incorporated into the various EA processes. Cambodia, Lao PDR, Thailand and Viet Nam already have standard EIA procedures and legislation in place, but none yet have procedures to deal with transboundary impacts. Several sets of issues need to be addressed on a regional basis, including how to establish mechanisms that allow environmental impact investigations to be carried out across national borders.

The MRC has commissioned consultants (ERM UK) to work with the National Mekong Committees to develop guidelines and suggest potential procedures and protocols that may be adopted by the four National Governments as mechanisms to incorporate transboundary impacts into their Environmental Impact procedures.

In a recent report, Öjendal *et al*. (2002) note that:

[16] The Mekong River Commission (MRC) is an inter-governmental agency of the four countries of the Lower Mekong basin: Cambodia, Lao PDR, Thailand and Viet Nam. The MRC replaced the Mekong Committee (1957-1976) and the Interim Mekong Committee (1978-1992), and was formed with the signing of the 1995 Agreement on "Cooperation for the Sustainable Development of the Mekong River Basin".

> "SEA is being increasingly discussed and promoted in the Lower Mekong Basin. Several projects and initiatives have been initiated by the Asian Development Bank and the MRC, including the *ADB Reta 5783: Strategic Environmental Framework* (SEF) *for the Greater Mekong Region* (ADB 2000a) and a project to develop guidelines for SEA by the MRC. Although riparians have reportedly responded positively, these are, however, isolated initiatves and SEA is so far rarely used for mainstream development planning"

Under the SEF project, the Stockholm Environment Institute was commissioned by the Asian Development Bank to assist the development of a strategic framework for guiding decision-making in the transport, water resources and environment sectors in the Greater Mekong Subregion (see section 4.1.3).

Another regional initiative, the APEIS (Asia-Pacific Environmental Innovation Strategy) project was launched in 2001 under the framework of the Environment Congress for Asia and the Pacific (ECO ASIA). The project aims to establish scientific infrastructure on environment and development, and to provide policy-makers with knowledge-based tools and innovative policy options that can support their informed decision-making for sustainable development in the Asia-Pacific region. APEIS consists of three scientific sub-projects:

- satellite- and ground-based integrated environmental monitoring (IEM):;
- assessments using environment-economy integrated models (integrated environmental assessment);
- research on innovative and strategic policy options (RISPO), in collaboration with multiple research organizations in the region.

6.5.1 China

The Environmental Protection Law (1979) included broad elements requiring EIA, particularly construction projects. Subsequently, the Environmental Protection Management Ordinance for Construction Projects (1998) introduced Regional Environmental Assessment. This extended EIA beyond the project to higher levels (i.e. regional development).

For the past decade, Regional Development Environmental Impact Assessments (RDEIAs) have been undertaken in response to the accelerated economic growth now taking place in special investment zones. For example, these have been applied to the Pudong Economic Development Zone in Shanghai, the Donghu Technological Zone in Wuhan, the Yalong Bay Tourism Development Zone in Hainan, and transformation of old industry areas in Lianong (Qi Zhong and Wang Huadong, 1993).

Until recently, there was no legal requirement for SEA in China. But since 1995 a small, but growing, number of SEAs have been conducted. These have been undertaken partly because of the inherent limitations of conventional EIA (e.g. failure to suggest alternative projects and sites), and partly because the government has recognised the significance and utility of SEA as a tool for sustainable development (Che, Shang and Wang, 2002). Examples include SEAs of:

- the *Coal and Electricity Strategy in Shanxi Province*, undertaken by the Institute of Environmental Science, Beijing Normal University (Wang *et al*. 1997);

- China's Automobile Industry Development Policy;

- the *East Coastal Zone Development Plan for Xiamen Province*, conducted by Xiamen Planning and Design Institute (funded by CIDA);

- the *Air Pollution Prevention and Control Act* – for the revision process, undertaken by the Environmental and Economic Policy Research Centre of the National Environmental Protection Department (Huang, 2000).

So far in China, SEA has faced numerous methodological and procedural limitations, which also restrict public participation. Policies and strategies have been kept secret from the public

The Environmental and Resources Protection Committee of the National People's Congress spent four years preparing a new Environmental Impact Assessment Law. This was adopted on 28th October 2002 and became effective on 1st September 2003 (Box 6.22).

Box 6.22: The new EIA Law in China

The new EIA law is a supplement to the 1979 legislation but is much more focused and incorporates the concept of SEA. In the early stages of its development, the aim was that it should cover three areas of focus : area (local) planning, strategic planning, and policy. The latter focus was subsequently dropped. The new law now provides for EIAs of long-term (i.e. 5-10 yrs) strategic plans at national, provincial and sector levels; and short-term (i.e. > 5 yrs) project plans at local levels:

"EIA as used in this Law refers to the methodology and system of performing analysis, projection and evaluation on potential environmental impacts resulting from implementation of a plan or a construction project, proposing counter measures to prevent or alleviate adverse impacts, and carrying out tracing monitoring".

EIA for Plans

(1) The law requires relevant departments under the State Council, and local governments at or above the level of municipality with districts and relevant departments under them, to:

- organise an EIA and prepare chapters or descriptions of environmental impacts of draft land use plans and construction projects and exploitation plans of regions, river basins and sea areas; and
- prepare EIAs and submit an EIS for draft sectoral plans concerning: land use; agriculture; livestock breeding; forestry; natural resources; cities; industries; energy; transportation; tourism and other specific plans.

(2) Project proponents must consult with the 'interested' public (holding expert meetings and public hearings or other means) to solicit comments and suggestions on the draft EIS from relevant government agencies, experts and the public; and the EIS must provide an account of the participation process and indicate what comments/suggestions have been adopted.

(3) The EIS must state how monitoring will be implemented, state what mitigation measures will be established and how they will be applied.

4) The EIA study must be rigorous and undertaken in a realistic and scientific manner.

(5) The EIA report must be prepared by qualified professionals, who must sign it and assume legal responsibility for its accuracy.

(6) Submitted EISs will be examined by a review group selected randomly from an experts database.

Sources:
(a) Interview with Professor Chen Fu, Former Director, Chinese Research Academy of Environmental Sciences People Republic of China (Hong Kong, 12.12.2002).
(b) National Peoples Congress (2002)

6.5.2 Hong Kong

In Hong Kong, the EIA system was initially established on an administrative pursuant to a Policy Address by the then Governor in 1992. It applies to policy, plan and programme proposals submitted to the Executive Council. A statutory basis was provided by the EIA Ordinance (1998). During the past five years, over 20 plans have been assessed under this Ordinance, whilst major policies and planning strategies have been reviewed under the SEA system. A r series of major initiatives have been subject to SEA including the following[17]:

- Port and Airport Development Strategy, 1989;
- Tseung Kwan o New Town Feasibility Study of Opportunities for Further Development, 1989;
- North Landau Development Plan, 1992;
- Railway Development Study, 1993;
- North West New Territories (Yuen Long District) Development Statement Study, 1994;
- Freight Transport Study, 1994;
- Territorial Development Strategy Review, 1996 (Au 1997) (Box 6.23);
- Third Comprehensive Transport Study, 1999;
- Second Railway Development Study (on-going); and
- Future Strategic Growth Areas – North Western New Territories, North Eastern New Territories, and Hong Kong Island South and Lamma (on-going).

Box 6.23: SEA of Territorial Development Strategy, Medium-Term Options, Hong Kong

The primary objective of the review of the Territorial Development Strategy (TDS) was to formulate a long-term development strategy for Hong Kong. The aims to keep apace with regional development and maintain Hong Kong's position as a leader within the region. Several rounds of detailed multi-disciplinary evaluations, studies and screening processes were undertaken. Individual components of the industrial, residential, commercial, transport, recreational, land use and port development strategies were considered in detail.

The TDS review provided two basic development strategies reflecting different growth characteristics. They had two different time horizons: a long-term strategy to year 2011; and a medium-term strategy with forecasts for the year 2006. The TDS also considered two development scenarios for the major economic hinterland for Hong Kong in the next few years: the Pearl River delta (the 'low-growth' scenario) and the neighbouring Guangdong Province in China.

Due to time constraints, the SEA undertook a comparative and qualitative review of three medium-term development options:

- harbour-biased reclamation;
- land-based developments in the New Territories (NT); and
- balancing the development needs of the Metro Area and North West New Territories.

[17] For more information, contact: Environmental Assessment and Noise Division, Environmental Protection Department, 27/F Southorn Centre, 130 Hennessy Road, Wanchai, Hong Kong.

The SEA drew on a range of assessment criteria/performance measures in several categories (used for an earlier SEA of the TDS preferred options in 1995): water quality; air quality (traffic and industry); noise (rail traffic, major road links); waste; potentially hazardous installations; ecology; planning guidelines compliance; and sustainability of development proposals.

The analysis suggested that a number of environmental problems will emerge before 2006. An action plan is proposed to mitigate the impacts of three issues of particularly serious concern:

- air quality deterioration linked to predicted increases in diesel-engined goods vehicle traffic;
- overloading of environmental infrastructure, including especially the NT sewerage systems and the strategic landfills; and
- increases in impacts from traffic noise.

Source: CD Rom of Hong Kong experience of SEA, Environment Protection Department, Hong Kong.

Hong Kong SAR (semi autonomous region) is not a developing country. But the extent of SEA practice and experience is of particular interest in light of its status in China, and the emerging number of transboundary environmental issues with neighbouring province of Guangdong, especially in the Pearl River delta. The Hong Kong Environment Protection Department has been active in documenting the lessons of experience gained in the past 10 years. It has used CD Rom and web sites to disseminate these materials (**http://www.epd.gov.hk/eia/english**). An interim SEA manual summarizes practice as applied to plans, strategies and certain policy proposals and draws on several regional and international conferences on SEA held in Hong Kong (Au 2004).

6.5.3 Indonesia

The EIA approach in Indonesia (abbreviated as AMDAL, *Analisis Mengenai Dampak Lingkungan*) is based on the Canadian Environmental Assessment Review Process. Under the Environmental Management Act 1982 an EIA is required for "every plan which is considered likely to have a significant impact on the environment".

6.5.4 Nepal

The environmental assessment of the Bara Forest Management Plan demonstrates the use of a generic EIA approach to the level of plan assessment (Box 6.24). The focus is on an evaluation of plan formulation rather than integration of environmental concerns into the ongoing process of decision-making.

Box 6.24: Bara Forest Management Plan, Nepal

The National Planning Commission, in collaboration with IUCN, has established a national EIA system in the country. Following the publication of national EIA guidelines in 1992, sectoral guidelines were formulated. Those for the forest sector require a mandatory EIA for the preparation of forest management plans. The Bara Forest Management Plan aims to shift the emphasis from protection-oriented management of *Sal (Shorea robusta*) forests to sustainable production-oriented management of the species. The proposed plan includes activities which will have both positive and negative environmental, economic and social effects.

This SEA considered the major impacts arising from two alternative options: (i) the do-nothing option (existing impacts continue) and (ii) implementation of the proposed plan. Over 150 possible impacts of varying significance were determined and arranged into 19 main issues of concern. Each issue was examined by a team of professionals to determine and rank the magnitude, extent and duration of the positive and negative impacts associated with each alternative. The results of this analysis formed the basis for recommendations to change the proposed management plan.

It was determined that the plan has considerable merit and should be implemented with some changes. The recommendations covered such topics as:

- the plan should cover all aspects of forest use;
- the development of necessary baseline data;
- the adoption of the required policy, legislative authority and institutional frameworks;
- working cooperatively with the people affected by the plan; and
- the development of sound silvicultural and harvesting practices.

(Sources: IUCN Nepal, 1995; OECD/DAC, 1997)

In 2002, with support from DFID, the National Planning Commission (NPC) began a study to consider links in the draft 10th Plan/Poverty Reduction Strategy Paper (PRSP) between the government's strategic goal of poverty alleviation and Nepal's environmental assets and constraints (Box 6.25, Table 6.5).

Box 6.25: Assessing the potential to introduce SEA in Nepal

The project was undertaken with support from consultants funded by DFID. It aimed to stimulate debate amongst various sector ministries about poverty-environment links in the planning process. It involved:

- examining the extent to which the links between poverty and environment are currently considered during development planning in Nepal;
- organising an informal Policy Forum, during which participants from the National Planning Commission (NPC), sector ministries/departments (agriculture, forestry, industry, local development, physical planning,, roads and environment) and donor observers discussed the opportunities to strengthen the consideration of poverty-environment links during the 10th Plan process; and
- assessing the need, demand, opportunities, feasibility and requirements of introducing SEA in Nepal to improve future consideration of poverty-environment linkages in the planning process.

This assessment of SEA was limited to a few discussions with NPC and sector ministry staff and to debate arising during the Policy Forum. Nevertheless, it led to several conclusions.

- There is clear support for SEA in Nepal within central government and academia.
- There are several possible entry points for SEA within the existing planning process: during the selection and prioritisation of programmes and projects; during mid term evaluation of the 10th Plan; and during the preparation and evaluation of future plans.
- Various stakeholders could have a role in developing and using SEA, eg NPC, sector ministries and local government planning teams, the Ministry of Population and Environment (MoPE) and public stakeholders such as NGOs.
- SEA would need to be integrated within wider efforts aimed at making planning activities more focused on meeting strategic development objectives.
- In addition to SEA, it would also be useful to monitor the extent to which development plans, programmes and activities are responding to poverty-environment issues.

The assessment concluded that the effective application of SEA in Nepal would depend on:

- sufficient demand for SEA in a wider context. The value of SEA needs to be recognised more widely within NPC, sector ministries, local government and public stakeholders;
- sufficient capacity (both staff numbers and competencies) existing within relevant agencies to develop and apply an SEA tool;
- the development of an SEA tool kit;
- SEA being given sufficient support and recognition to enable it to become an integral tool within the planning process; and for its results to effectively feed into the decision-making process. In other words, consideration of environment is fully integrated within the approach to planning.

It was recommended that:

- wider consultations be undertaken to determine the extent of wider demand for SEA – possibly through a pilot study;
- an examination of how SEA and poverty-environment monitoring could feed into on-going and/or planned initiatives to improve the planning process in Nepal. Where possible, the development of SEA should build on existing efforts to make planning more sustainable, e.g. linking with the efforts of the Sustainable Development Agenda for Nepal (SDAN) and Sustainable Community Development Programme (SCDP);
- The capacity needs necessary for the development and application of SEA (and poverty-environment indicators) should be clearly identified – leading to a suitable capacity-building programme;
- A draft SEA tool kit (including methods, guidelines, criteria, poverty-environment indicators and poverty-environment profile) should be developed – preferably through a broad stakeholder process. This should be simple, straight forward, quick to use, not require excessive knowledge or data, and be based, as far as possible, on existing approaches and methods;

The draft SEA tool (and draft poverty-environment indicators) should then be piloted – possibly by a small number of authorities (e.g. Ministries of Agriculture and Forestry) and local government administrations. This would provide the basis for training and capacity-building and to help improve the tool and enable the experience to be disseminated to a wider audience.

Since this assessment was undertaken, the level of conflict in Nepal has worsened and it has not been possible to take these ideas forward.

Source: ERM Nepal (2002)

6.5.5 Pakistan

An SEA training programme was initiated in 1997 by the World Conservation Union (IUCN) for staff of government Planning and Development Departments (see footnote 2, Chapter 1). This has led to increased awareness and demand for SEA in Pakistan. IUCN-Pakistan has undertaken an independent SEA of Thermal Power Generation Policy in Pakistan and presented this to government (Box 6.26). It led to a series of discussions within the Planning and Development Department which is now beginning to request that SEAs be undertaken for major national and provincial-level initiatives at the policy level

Table 6.5: Possible roles for the development and use of SEA in Nepal
(ERM 2002)

Stake-holder	Remit	Opportunities to have a role in SEA	Possible role in the development and/or use of SEA
NPC	Directs planning process, how planning is undertaken and how programmes and projects are carried out	• Influential role and strong links with sector ministries • Has a department and a member responsible for environment	• Lead development and introduction of SEA • Encourage sector ministries to use SEA
MoPE	Responsible for: • Environmental management • Disseminating information • Monitoring and evaluation • Developing capacity	• Based on its remit , MoPE has an important role in development and implementation of SEA • Have persons trained in environmental management	Supporting NPC to: • Develop SEA tool kit • Select criteria and indicators • Manage preparation of poverty-environment profile • Manage SEA of periodic plans against this profile • Disseminate information on SEA • Carry out pilot introduction of SEA & disseminate results • Provide technical support and guidance for SEA activities • Review quality of SEA outputs • Monitor its effectiveness
Sector Ministries	• Plan and carry out development activities within their sectoral areas • Prepare sectoral submissions for periodic plans • Select and prioritise programmes and projects for implementation	Ministries relevant to poverty-environment: Agriculture, Forestry, Water Resources (includes energy), Physical Planning, Local Development, Industry and Tourism Each ministry has a unit responsible for planning and one for environment	• Applying SEA to the selection of programmes and projects • Monitoring poverty-environment indicators relevant to their sector
Local Government	• Same as sector ministries but focused on local level	• Planning becoming increasingly being decentralised. Their role is therefore increasing • Better placed to recognise local poverty-environment linkages • Good links with public stakeholders - can therefore encourage their involvement	• Informing the development of SEA tool e.g. during selection of criteria & indicators and supporting preparation of poverty-environment profile • Piloting a draft SEA tool • Using SEA to select and prioritise development programmes and projects • Monitor contribution of development activities to poverty-alleviation at local level • Disseminate experience
Public Stakeholders (e.g. NGOs, Community organisations, academics etc.)		• Increasingly being engaged in planning and sustainable development activities • Represent the poor and recognise their opportunities and constraints • Existing activities (SDAN, SCDP) could be used as a vehicle to encourage participation in SEA	• Informing debate on SEA – whether it useful, what form it could take, what criteria and indicators to use etc. • Reviewing relevance of tool, criteria, indicators and impact of SEA.

Box 6.26: SEA of Thermal Power Generation Policy, Pakistan

In a race to attract foreign investment, the Government of Pakistan has provided unprecedented incentives which guarantee high profit to investors in thermal power generation. In return, the country stood to receive clear short-term economic gains. In pursuit of this goal, the government set up a Private Power and Infrastucture Board, based in Islamabad, with a mandate to facilitate the establishment of power stations throughout Pakistan. It entered into over 30 agreements for independent power plants (IPPs).

The National Conservation Strategy (1992) recommends the location of highly polluting units away from populated and ecologically-sensitive areas. According to the National Environmental Quality Standards (NEQS), 1993, oil-fired thermal power stations need to substantially reduce emissions, if installed in an already polluted environment. In 1994, with support from CIDA, A National Power Plan was developed. However, the government did not take these into account in negotiating agreements for foreign funding.

Government policy on thermal power generation gave investors the freedom to choose the site, the technology and the fuel. Contracts required investors in such projects to submit an EIA to the government. Yet these EIAs had little influence on project location and design, and much less on the actual need for such projects.

In 1994, IUCN-Pakistan undertook a study of a plan to meet the electricity needs of Karachi - an already highly polluted city. This proposed several new oil-fired thermal power stations to meet projected power demand. The study found that, individually, each of the proposed stations was well within the NEQS maximum allowed limit of 500 tons of SO_2 emission per day. But cumulatively, these stations would emit an additional 1000 tons of SO_2 plus one ton of toxic metals daily.

Favourable terms were offered to foreign investors and soon led to an increase in electricity prices. As a consequence, many local industrialists pooled their resources and established their own power generation plants for the own use (captive units). This reduced the load on the National Grid system. But many of these plants were installed with little or no control pollution control devices. Other industrial consumers signed agreements with the private power companies. Due to public pressure, lobbying and a strong role by the media, several of the proposed plants (IPPs) were relocated. Use of SEA at an early stage would have avoided these problems. To mitigate similar problems, training workshops on SEA were organised in Pakistan by IUCN.

The Ministry of Environment wrote to IUCN-Pakistan giving an assurance that “because of the requirement for EIAs and the existence of the NEQS, the new IPPs would not pollute the environment”. This prompted IUCN-Pakistan to undertaken an SEA of the thermal power generation policy. It involved a desk exercise to develop scenarios for a range of conditions. These drew from past experience of power plant developments, particularly the preferences and tendencies of entrepreneurs in selecting sites (e.g. in or close to Karachi, or in remote areas close to water for cooling) and the problems of transporting oil to remote plants and connecting them to the national electricity grid.

A working document set out the environmental consequences under these scenarios. It was presented to staff of the Planning and Development Department - senior officers from sections dealing with agriculture, industry, irrigation, population welfare, the power sector, etc. They had experience of dealing with thermal power plant issues and other large development projects. Subsequent discussion focused on the cumulative impacts on both a local and country-wide scale.

The SEA revealed that whilst the government was fully aware of the environmental dimensions associated with thermal power generation, assessment was based only on EIA.

The SEA made it clear to the policy-makers that EIA alone was not sufficient to guarantee sustainable development. EIA was used as a down-stream decision-making tool applicable to individual projects, especially after deciding the site, technology and fuel. So its scope was very limited and missed the big picture. As a consequence, many thermal power stations using high-sulphur furnace oil became clustered in one city and added to the already polluted air. Alternatively, they were developed in a

scattered way in remote places. This made it difficult to supply them with furnace oil and to connect them with the National Grid System.

This SEA was used as a case study to illustrate the need for an SEA as an upstream decision-making tool, and to minimize all the foreseeable problems at the policy formulation stage. Following a training programme, the Planning and Development Department is beginning to request that SEAs be undertaken for major national and provincial-level initiatives at the policy level.

Sources: Naim (1997a, 1997b; pers.comm.1998)

6.5.6 Thailand

EIA is required in Thailand for a range of project categories under the Improvement and Conservation of the National Environmental Quality Act (1975).

An independent SEA of shrimp farming was undertaken in 2001 to assist the Swedish International Development Agency (Sida) decide whether to support this industry (Lindberg & Nylander 2001). The aim was to assess the situation of the coastal shrimp farming industry in the southeast of Thailand. The SEA compared the most common different shrimp farming method (semi-closed intensive) with two alternative systems (closed recirculated, and sludge removal). The study was conducted in five provinces and included interviews with shrimp farmers and well as experts in government departments, universities and environmental organisations. The report compares the environmental and socio-economic impacts of the different shrimp farming systems (based on a 'back-casting' assessment of existing shrimp farms).

6.6 SEA elsewhere

Most countries in the ***Middle East and North Africa*** region have enacted some form of EIA legislation but few have established provision for SEA or consideration of transboundary impacts.

6.6.1 Lebanon[18]

Recent regulatory developments have paved the way for the development and application of SEA in the Lebanon: a Framework Law for Environmental Protection (Law 444, adopted in 2002), and a draft Decree on EIA (under consideration at the Council of Ministers). The Framework Law highlights the principle of EIA as a tool for planning & management (Article 4). It stipulates that private and public proponents must undertake an environmental assessment for all projects which are likely to affect the environment due to their sizes, nature, impacts or activities (Article 21), including study or programme or investment or planning proposals which concern a complete area or sector of activity (Article 22).

So far, there has been only limited strategic planning, particularly with respect to assessing environmental impacts and linkages among potentially damaging public actions and undertakings. This has prompted the Ministry of Environment, in collaboration with UNDP,

[18] With contribution by Alissar Chaker Project Manager, Ministry of Environment , Lebanon.

to implement a project on SEA and land use planning. Funding has been provided by the European Commission through its LIFE Third Countries Programme (Box 6.27).

Box 6.27: SEA and land use Planning project in Lebanon

Aim of the Project

The project started in January 2002. Its overall aim is to integrate environmental considerations into policies, strategies, programmes and plans at the national level in order to alleviate major problems facing the national sustainable development agenda in the country. Three objectives were set:

- develop a framework for SEA for Lebanon;
- build relevant institutional capacities at the Ministry of Environment and the Directorate General of Urban Planning, as well as in other concerned line ministries and stakeholders; and
- apply the proposed SEA framework for the development of environmental guidelines to be applied to land use planning at the national level.

Main interventions

A. Policy aspects
   - Develop a framework for SEA suitable to the Lebanese context, including institutional and procedural arrangements.
   - Develop environmental guidelines for land use planning.

B. Capacity-building
   - Train concerned public institutions on mainstreaming:
     1. SEA application, monitoring and evaluation in their planning and decision-making processes; and
     2. environmental guidelines in urban planning and land use management procedures.
   - Train private sector consultants on:
     1. scope and significance of SEA process; and
     2. mainstreaming proposed environmental guidelines in land use planning studies.

C. Institutional strengthening.
   - Develop a national strategy for the application and monitoring of the SEA process in priority sectors.
   - Develop a national strategy for incorporating and monitoring the application of environmental guidelines in urban planning and land use management procedures.

D. Dissemination and general awareness
   - Prepare a guiding manual on SEA process and application procedures.
   - Draft a guidebook on the application of environmental guidelines in land use planning.
   - Develop a general advocacy brochure for strategic decision-makers.
   - Organise regional meetings to disseminate SEA to NGOs and local authorities.

E. Demonstration activity:
   - Apply SEA procedures & environmental guidelines for land use planning in a pilot project and publish a good practice case study for future reference.

A demonstration activity will be undertaken for land use planning. In the Lebanon, poor land use planning is one of the major problems leading to environmental degradation, and threatening natural and cultural resources. Approximately 80% of the country remains unclassified and is often subject to haphazard development. This is an important fact given that land use planning plays a critical role in shaping and regulating economic trends in real estate and tourism markets - two of the major economic sectors in the country. Major stakeholders in this sector include the Directorate General for Urban Planning, the Higher Council for Urban Planning, the Council for Development and Reconstruction, and municipalities.

This project complements the national land use planning initiative being executed by the Council for Development & Reconstruction (CDR) in collaboration with the Directorate General of Urban Planning for the preparation of a National Land Use Plan.

A participatory approach

Partners and stakeholders represented on the project steering committee include:

- Ministry of Environment;
- Directorate General of Urban Planning;
- Council for Development & Reconstruction;
- Parliamentary Committee for the Environment;
- Other concerned public institutions;
- Municipalities;
- NGOs;
- Private consultants;
- Academia and research centres.

Source: Contributed by Alissar Chaker, UNDP-Lebanon

6.6.2 Pacific Islands[19]

In this region, EIA is still in its infancy. Since 1991, the South Pacific Regional Environment Programme (SPREP) has promoted the use of project EIA in Pacific Island Countries (PIC) focusing on awareness-raising, training and technical assistance. This programme aimed to influence the integration of EA principles and economic development planning and the enactment of environmental legislation and revision of EA guidelines. But, following a review of progress in 2001, McIntyre (2002) reports on the slow uptake of EIA laws, the marginalisation of EIA processes and continued spasmodic EIA application in development processes. The wider array of environmental assessment, planning and design management techniques, including SEA approaches for policies, plans, programmes and large area assessments of development initiatives, have not been targeted.

The focus has now shifted to SEA methods, techniques and tools (Onorio 2002). National reports have been prepared for the Review of the Implementation of the Barbados Programme of Action[20] (BPOA+10) (now due to take place in Mauritius in January 2005). These call for integrated planning systems (environmental / resource use). In response, the SPREP Secretariat is pursuing a long-term programme to help PICs develop and use appropriate tools for integrating environment and development decision-making, eg SEA, environmental economics and planning guidelines (Box 6.28). A regional Environmental Assessment Facilitation Office is planned to provide advisory services to PICs and assist with capacity development.

The first SEA in the region was undertaken in 1996. There has been an increase in coastal related assessments in the smaller island states related to integrated coastal management that includes consideration of socio-economic development, freshwater management, coastal protection and climate change considerations. For example, an SEA case study of the Fiji Islands Tourism Plan is being sponsored by the Asian Development Bank in partnership with SPREP and WWF South Pacific Programme (Box 6.29)

[19] With contribution from Matt McIntyre, South Pacific Regional Environment Programme, Samoa

[20] An international programme adopted in 1994 at a global conference on the sustainable development of small island developing states (SIDS), held in Barbados.

Box 6.28: Promoting SEA in Pacific Island Countries

In **Samoa**, the Planning and Urban Management Act (PUMA) (& Authority), 2003, promotes environmental planning that incorporates EIA, strategic planning, and infrastructure coordination, and provides for SEA of area-wide plans. It is unclear if the act enables SEA of national policies and programmes.

In **Niue**, the Resource Use Planning Project, completed in 2000, provided the government with a contemporary integrated planning system. It culminated in a draft Integrated Environmental Planning and Management Bill. This incorporates SEA principles, objectives and legal provisions. The explanatory notes describes Part 3 of this Bill (Environmental Instruments) as instituting the overarching aim of the legislation: "to bring together multi-sector and cross sector policy documents and give them power under a consistent legislative platform. Over time even their contents, styles and designs will have some consistency allowing easier governance".

In **Vanuatu**, a unique catchment case study dealt with vertical and horizontal government linkages, land and access tenure disputes, conflict over land use, slum developments and catchment-coast degradation issues. The study explored the use of sub-national environmental planning approaches to mainstream the environment and produced a road-map towards integrated platforms over time. The road-map included the nomination of projects that could assist the country strive quickly towards the integrative approaches.

Box 6.29: Strategic Environmental Assessment of the Fiji Islands National Tourism Plan

The Asian Development Bank (ADB) in cooperation with the Government of New Zealand (NZAID) is formulating the Pacific Region Environmental Strategy. To help achieve this, case studies are being conducted to develop and test, in cooperation with partners in the Pacific, tools and approaches such as SEA and methodologies for policy integration. One of these was an SEA of Fiji's Tourism Development Plan (1985-2005) (TDP) undertaken by the World Wide Fund for Nature - South Pacific Programme (WWF-SPP)[21] in March-April 2003. Tourism is the country's fastest growing industry. and has the greatest capacity to generate wage and salary employment for the country.

The objectives of the study were to:

- inform the mid-term review of TDP in 2003 by assessing the environmental and sustainable development impacts of the current plan; and
- test the usefulness of SEA as a tool for improving the sustainability of strategies and plans in the Asia-Pacific region.

WWF-SPP formed a team comprising a team leader and SEA expert, a socio-economist and a tourism specialist, supported by university and technical experts from the region. The team compiled relevant data and information, conducted public meetings and prepared the SEA reports.

In a memorandum of understanding between WWF-SPP and the Ministry of Tourism, it was agreed that the SEA would provide the environmental and social components of the TDP mid-term review. Furthermore, the SEA results would be integrated into the Tourism Plan and other national and sector policies, plans and programmes.

The process was guided by an Advisory Group representing a range of stakeholder interests (tourism industry; Ministry of Tourism; Ministry of Local Government, Housing and Environment; University of the South Pacific; Fiji Visitors' Bureau),. It met three times during the assessment. A consultation

[21] A regional NGO working in Pacific island countries.

strategy was devised to ensure full stakeholder participation.

Methodology

The SEA compared the current environmental, social and economic baseline and likely trends under the TDP against sustainability objectives. The approach adopted was based on the EU SEA Directive and the methodology followed is summarised in Table 6.6.

Results

The study found that whilst tourism is providing considerable economic benefits to Fiji, a significant percentage of tourism income leaks back out of the country, and the country is becoming highly dependent on this sector. There are many areas where tourism is causing serious environmental degradation (eg to coral reefs). Much of the policy, legislation and regulations to ensure good tourism practice are in place. But they not enacted, implemented or enforced. Thus, the 'step-change' growth in tourism (proposed in the TDP to replace "bumbling along") is likely to increase tensions between tourist developers, landowners and local communities. Therefore, a precautionary approach to future tourism development in suggested and various directions are recommended. In addition, full implementation of institutional and regulatory framework for environmental assessment and management are recommended as necessary for sustainable tourism expansion.

The SEA has led to a number of tangible outcomes:

- the SEA recommendations have been adopted by the National Tourism Council (NTC), accepted by the Permanent Secretaries Meeting and endorsed by Cabinet;
- the Ministry of Tourism and WWF are exploring the possibility to recruit a Policy Officer to work on the SEA recommendations with all stakeholders;
- a work plan has been developed at a stakeholders consultation workshop (attended by 50 members of the NTC and government departments) to implement key recommendations; and WWF and local stakeholders have developed action plans to guide and implement the recommendations;
- key stakeholders such as resource owners and the tourism industry have begun to discuss closer collaboration on sustainable tourism issues;
- the Tourism Department of Fiji's university is exploring how to include SEA as a tool in its sustainable tourism course, and is planning a one week workshop on SEA to build awareness and capacity in the region;
- WWF and partners have developed a GEF proposal to examine funding implementation of the recommendations; and
- the ADB has added a biodiversity component to a proposed loan to the Fijian government for sustainable tourism and outer-island infrastructure. Central to this are the links between sustainable tourism and environment.

Source: Levett & McNally (2003)

Table 6.6: Summary of process for SEA of Fiji's Tourism Development Plan
(Source: Adapted from Levett & McNally (2003)

SEA/*SA* Stage	What to decide	What to record	
A. Identify relevant plans and programmes and their relation to the plan	What other plans and programmes influence the plan in question	In the Scoping Report (linked to issues & options report)	List of relevant plans and programmes and their requirements
B. Devise draft SEA objectives, indicators and targets; collect baseline data, including data on likely future trends; issues and constraints	What are the sustainability objectives, targets and/or indicators to test the plan options and policies against; what sustainability issues and constraints to consider during plan-making		List of SEA objectives, and indicators and targets where relevant; data on baseline environment; list of relevant sustainability issues and constraints
C. Identify (more sustainable) options for dealing with the plan issues	What options to consider for each issue identified		List of options for each plan issue
D. Prepare Scoping Report; consult	What to include in the Scoping Report		Results of Stages A-C; agreed written statement of how to proceed with Stages E-H
E. Assess the plan options' effect on the SEA objectives, and their consistency with relevant other plans and programmes; choose preferred options; propose mitigation measures	What are the preferred (mitigated) options from Stage C, using the objectives, indicators and targets developed in Stage B	In the environmental Report (linked to draft plan)	List of preferred (mitigated) options; explanation of why these are preferred; effects of these options; mitigation measures proposed
F. Screen the plan policies and proposals; assess their effect on the SEA objectives; propose mitigation measures including links to EIA	What policies and proposals to assess; what the effects of those policies and proposals are on the sustainability; how effects can be minimised/ enhanced		Summary of effects of plan policies and proposals; mitigation measures proposed, including links to EIA and lower-level plans and programmes
G. Propose SEA monitoring	How to measure actual effects of plan on sustainability		Proposed monitoring measures
H. Prepare the Environmental Report to accompany the draft plan; consult	How to present the data from stages A-G; how to consult the environmental *and other* authorities and the public		Prepare the Environmental Report; amend if necessary in response to consultation
I. Take consultation results into account	How to respond to consultation results		How consultation results were addressed

Case 6.1: SEA for the Proposed East London Industrial Development Zone, South Africa

(Source: CSIR, 1997b)

An industrial development zone (IDZ) - "an optimal area for the location of intentionally competitive industries"- was proposed for the West Bank area (west of the Buffalo River) of East London in the Eastern Cape. The IDZ was part of the government's Spatial Development Initiatives (SDI) programme. Possible modifications to the existing East London harbour or, alternatively, a new harbour at Fullers Bay on the West Bank were associated with the proposed development. The Border Metropolitan Development Corporation (BOMEDCO) is a non-profit company. It comprises provincial and local government representatives in the Eastern Cape, together with companies having an interest in development of the area for industry. BOMEDCO commissioned an SEA as part of a feasibility study for the IDZ. The SEA was initiated during the earliest stages of the feasibility studies for the proposed IDZ and harbour. It aimed to inform decision-making by BOMEDCO members on whether, and under what conditions, an IDZ could proceed in the area concerned. As far as can be judged from the SEA report, no specific industrial developments were identified or proposed by BOMEDCO for possible location within the proposed IDZ. Neither were any restrictions suggested for the type of industrial developments that might be sited there. So it would have been difficult to assess specific impacts on the environment.

The SEA was undertaken by the Council for Scientific and Industrial Research (CSIR). It followed the approach which it has pioneered in South Africa (see section 6.1.1 for details). This approach differs from most other SEA methodologies. The focus is not so much on impacts of the development on the environment, but on the opportunities and constraints that the environment presents for development. The stated objectives of the SEA were to;

- assess the environmental opportunities (resources and potential benefits) and constraints (sensitive environments and potential costs) which could affect the development of the proposed IDZ;
- assess the possible direct, secondary and cumulative impacts and benefits that could result from the proposed IDZ; and
- evaluate the strategic benefits and impacts that must be considered by relevant authorities and decision-makers.

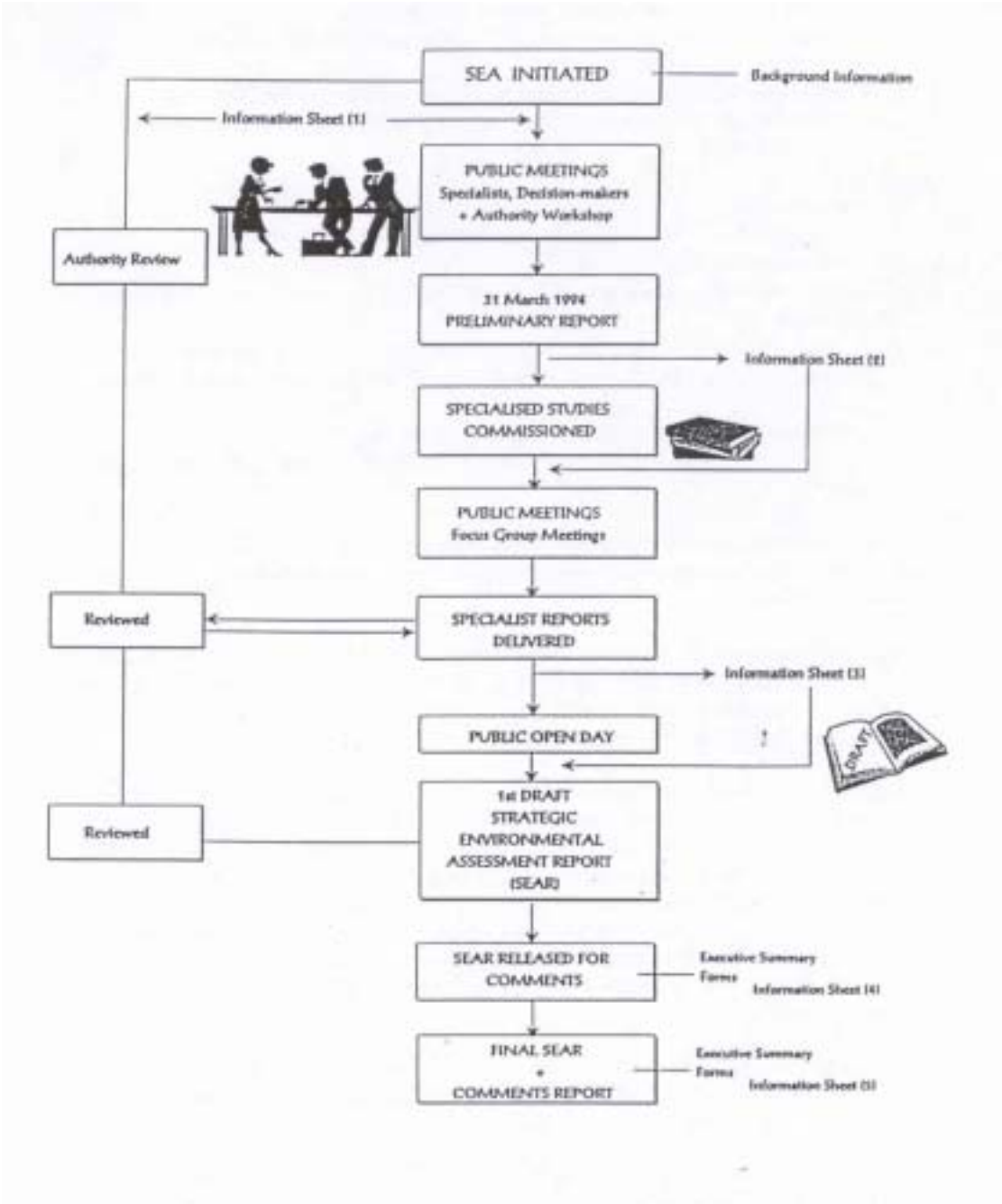
Current land uses in the area include: residential (formal and informal), agricultural, business, existing industry, railways and harbour facilities, recreational, conservation, quarries, and open spaces (both passive and active). East London has a high unemployment rate and economic growth rates are below the average for South Africa. Current industrial development in the area is limited. The City has not succeeded in attracting tourism as a major income source.

The SEA was conducted over a relatively restricted time frame during 1997 (initiated February, preliminary report by 31 March, feasibility studies by 31 July, draft report by 8 August). The process is shown in Figure C6.1.1. The draft SEA report was circulated widely for public comment and was also independentally reviewed.

The draft SEA has eight chapters which:

- introduce the study;
- set out the approach and methods used;
- describe the proposed IDZ area;
- discuss how the environment affects potential development in the area;

Figure C6.1.1: Process for SEA of East London IDZ



- consider potential cumulative effects and 'sustainability' indicators;
- present proposed development principles and guidelines for the West Bank area (to be adhered to if the project proceeds to the next stage of detailed planning covering) - including criteria for project EIA and guidelines for the environmental quality of air, water and other resources;
- describe the 'public participation' process followed; and
- make conclusions and recommendations - including for environmental management.

The '*public 'participation'* was managed initially by the Institute for Democracy in South Africa (IDASA) and subsequently by Independent Mediation Services of South Africa (IMSSA). It involved:
- public meetings;
- a review workshop involving specialists, authorities and decision-makers;
- focus group meetings;
- distribution of information sheets at regular intervals (faxed, posted and available at meetings);
- Authority Review (to obtain feedback from the authorities on the scope of the SEA, the preliminary issues identified, and to confirm roles and responsibilities with respect to the IDZ);
- public open days to present the finding of the SEA; and
- comments submitted to IDASA and IMSSA (telephonically and by fax), and passed to CSIR.

Various *specialised studies* were also commissioned (marine environment, terrestrial ecology, air quality, visual assessment, near shore processes and coastal dynamics, and social and economic issues).

The SEA examined the no-go options. It concluded that if the IDZ were not to proceed, the risk of a negative impact on tourism opportunities would be removed, and there would be real potential for critically-needed increased housing (both higher and lower income), recreational facilities and conservation areas.

The report tabulated findings on potential strategic benefits and costs for a range of issues. These covered:
- the natural environment (marine environment; terrestrial ecosystems; and air quality);
- infrastructure (water resources and supply;
- disposal of solid, liquid and hazardous wastes;
- transportation networks);
- socio-economic issues (displacement of communities; housing; demands on health, education and other services; jobs creation and economic growth; and other economic opportunities); and
- planning and management (environmental management system; conservation, tourism, agriculture, marine and recreational resources; regional assessment of site options; and financial and environmental costs and benefits).

The SEA report discusses conditions under which further planning of the proposed IDZ could proceed. It sets out a proposed approach to develop a strategic environmental management plan to facilitate development with the West Bank area.

The overall conclusion of the SEA was that "there are no environmental reasons prohibiting further planning of the proposed development" ..... provided "that the principles provided in the SEA are applied in the further planning and development of the IDZ and harbour". Nevertheless, the report does list significant environmental constraints which needed to be considered in decision-making and detailed planning. These included:
- exisiting residential areas and informal settlements;
- existing recreational areas;
- existing poor marine water quality
- wave driven long shore drift sediment movement;
- vegetation of high conservation importance;
- areas of high sensitivity;
- key terrestrial processes;
- historical sites;
- a car manufacturing plant;
- existing land zoning (with respect to ambient air quality guidelines that would be required for industries siting in close proximity to residential areas); and

- fresh water supply.

The SEA also identified potential cumulative effects from the proposed IDZ and suggested "sustainability indicators" (in practice a range of environmental, social and economic indicators) against which cumulative effects could be tracked and examined at a later stage.

The SEA focused narrowly on the immediate West Bank area. Issues not covered by the study include an assessment of alternative sites for the proposed IDZ, and possible 'upstream and downstream' effects (environmental, social or economic) in the hinterland of the IDZ and wider afield.
There was considerable media interest when the SEA was published. But, subsequently, there has been very little progress with the IDZ. Politicians have been considering the enormous investment that will be required to establish a new deep water port and/or IDZ during a climate when national economic growth have been below predicted levels.

Case 6.2: SEA of Tofo, Barra, Tofinho and Rocha (TBT) beaches area, Mozambique

(Source Gove, 2003)

Introduction

Following the end of civil war, there was rapid occupation of coastal land in southern Mozambique with the aim of constructing tourism infrastructure. This has resulted in several problems:

- unorganised occupation, e.g. installation of hotels in the crests and slopes of fore-dunes;
- illegal occupation and selling of land (by Mozambican law, land belongs to the state and can not be sold);
- illegal tourism activities; and
- conflicts between investors, and between investors and local communities.

As a consequence, the Provincial Government of Inhambane requested the assistance of the Centre for Sustainable Development for Coastal Zones (CDS-ZC) – an advisory institution attached to the Ministry for Coordination of Environmental Affairs (MICOA) – to conduct an SEA. This would be an input to the preparation of the Macro-zoning Plan for the Tofo, Barra, Tofinho and Rocha (TBT) beaches area. It was foreseen that the plan might result in significant environmental impacts in the region that could be reduced by submitting it to an SEA by:

- establishing a framework requiring an EIA - in accordance with existing legislation – for various types of project. Examples include: the implementation of new tourism facilities, the re-design of existing facilities, the development of new tourism activities such as diving, fishing, etc., and the development of livestock, agriculture, etc.; and
- the development of infra-structure including roads, cattle dips, and waste-water treatment systems that could have impacts on the environment.

During 2001, a series of presentations on SEA were organised by CDS-ZC. These were held within MICOA (at central and provincial levels), with line Ministries, and with the Governments of Gaza and Inhambane Provinces. The presentations were made by an external advisor, supported by the Integrated Coastal Zone Management Project (Phase II) and financed by DANIDA.

Following these, in 2002, CDS-ZC applied a trial SEA procedure in the TBT beaches area. Those was undertaken together with DPCA-I (Provincial Directorate for Coordination of Environmental Affairs of Inhambane) and the ETP (Provincial Technical Team - comprising several provincial directorates and representing sectoral ministries at provincial level).

TBT covers 88 km^2 (46% of the total area of Inhambane municipality) and is one of the main tourism destinations in Mozambique, used mainly by South African tourists.

Steps in the SEA process

The steps in this process are summarised in Box C6.2.1. The SEA involved several standard elements:

- *Scoping* of environmental objectives;

- *Evaluation of environmental indicators* (eg beach cleanliness, area occupied by natural dune vegetation, fish catches, quantity/quality of aquifers);

- *Defining and gathering required baseline environmental and socio-economic information* – to forecast the magnitude of impacts of activities envisaged in the macro-zoning plan;

- *Assessment of potential impacts* – based on expert judgement and through two (costly) workshops – one for national and provincial technical government staff; the second involving stakeholder participation;

Box C6.2.1: Steps in SEA in (Tofo, Barra, Tofinho and Rocha Beaches) area, Mozambique

1. ***Presentation of the SEA procedure*** to the Provincial Government of Inhambane - to sensitise decision-makers and obtain their approval and endorsement.

2. ***Planning of SEA activities*** for TBT by CDS-ZC and DPCA-I. All activities were to be at provincial level (coordinated by DPCA), and involve all relevant provincial and municipality authorities as well as local communities, private sector and national environmental institutions.

3. ***Creation of Provincial Technical Team (EPT)***, composed of the DPCA-I, Municipal Council of Inhambane City, Provincial Directorate of Public Works and Habitation, Provincial Services for Geography and Cadastre, and Provincial Services of Fisheries. Other Provincial Directorates (Tourism and Agriculture and Rural Development) were contacted, but were unable to participate.

4. ***Collation and processing of biophysical, socio-economic, legal and institutional information***. This work was done slowly to enable local communities, fishermen and tourism operators to understand it and gain confidence with the ETP; and so they could participate actively in the SEA process. Information was collated by ETP together with Secretaries of TBT neighbourhoods.

5. ***First workshop***, with participation of technical staff from provincial and national institutions. Provincial authorities included the members of ETP. National institutions included the National Directorate for Environmental Management (Department of Coastal Zone Management) and the National Directorate for Territorial Planning.

6. ***Feedback*** of the results of the first workshop to local communities and tourism operators for information, critical comments, suggestions and corrections. Separate meetings were held between the ETP and the tourism operators of Barra and Tofo Beach, the local communities of all the neighbourhoods of TBT and the local fishermen of Barra, Tofo and Rocha Beaches.

7. ***Preparation for participation*** of local communities and tourism operators in the second workshop - through separate meetings. The different groups chose their representatives in a transparent way and to represent all the neighbourhoods within TBT and activities in the region (agriculture, livestock, fisheries and tourism).

8. ***Second workshop***, with participation of local communities, tourism operators, government institutions and tourism association. Beside ETP members, the government institutions included the Provincial Directorates of Agriculture and Rural Development, Tourism, Planning and Finance, the Maritime Authorities, and National Directorates for Environmental Management (Department of Environmental Management), Territorial Planning, and EIA.

9. ***Feedback*** of information to local communities and tourism operators for information, critical comments, suggestions and corrections. Separate meetings were held between the ETP and the tourism operators of Barra and Tofo Beach, the local communities of all the neighbourhoods of TBT and the local fishermen of Barra, Tofo and Rocha Beaches

10. Elaboration of preliminary SEA

11. ***Presentation*** to Provincial Government for approval. This meeting included the National Directors of Tourism, Planning in Ministry of Tourism, Territorial Planning, the Director for Environmental Affairs of Maputo Province, and a consultancy company (KPMG).

12. Production of final version of SEA Report

13. ***Inclusion of alternatives*** in the Macro-Zoning Plan – taking account of the potential impacts identified during the SEA procedure, setting requirements for the design of macro-zones and the elaboration of matrices for each of the identified macro-zones, with permitted and forbidden activities and norms for permitted activities.

- *Consideration of alternatives* to mitigate negative impacts – including general alternatives such as prohibiting or restricting particular practices/activities, and/or separating certain activities geographically to avoid cumulative impacts; as well as specific alternatives (Table C6.2.1).

- *Application of SEA results to TBT Macro-zoning Plan* – in two ways:
  (a) identifying community protection zones and a community reforestation zone; and
  (b) integrating recommended alternatives in the plan as obligatory conditions to be met in the seven different identified zones for approval of development proposals.

Conclusions

Some aspects of this SEA can be highlighted:

- High commitment, since the start of the process, from the provincial government and the municipality to adopt and use SEA inputs into the Macro-Zoning Plan. New land concessions were stopped until the finalization of these processes.

- Full involvement of all relevant stakeholders and decision-makers for TBT throughout the SEA process. This allowed the early resolution of conflicts and the achievement of consensus, except concerning the mandates of the municipality and provincial authorities to license land use.

- The preparation of the Macro-Zoning Plan and the SEA were undertaken simultaneously, maximising the integration of environmental aspects into strategic decision-making;

- The environmental authorities (CDS-ZC, DNAIA, DNGA, DNPOT and DPCA-I) were deeply involved both in the preparation of the Macro-Zoning Plan and in the SEA. This inhibited the revision of the SEA report by an independent environmental authority as envisaged when the SEA was designed.

- The monitoring of environmental, economic and social aspects raised in the SEA report and in the Macro-Zoning Plan will de undertaken by a Commission, proposed by the Provincial Government. It includes the Provincial Directorate for Support and Control and the Provincial Directorate for Environmental Affairs and the CDS-ZC in order to guarantee the correction of implementation aspects.

Table C6.2.1: TBT SEA: Specific alternatives

Potential Impact	Alternatives	Approach
Proliferation of litter	➢ Permanent environmental awareness campaigns to tourists during the peak seasons ➢ Creation of permanent conditions for accommodation of litter on beaches and its rapid removal	Campaigns in partnership with private sector, NGOs and civil society
Increase on Beach Erosion	➢ Prohibition of installation of tourism facilities on primary dunes	Application of the law in force
Reduction, Depletion and/or Contamination of Aquifers	➢ The installation of tourism facilities, beach houses, and campsites should be done in accordance to the capacity of aquifers in providing sufficient water (determination of carrying capacity of the aquifers). ➢ Consider forms of re-utilisation of residual water. ➢ Implementation of proper treatments of liquid and solid residues in a way of avoiding contamination of aquifers ➢ The use of fertilizers and pesticides for the improvement of agricultural activities should be done in such a form to minimize the contamination of aquifers ➢ The construction and functioning of cattle-dips should be done in such a manner to minimize the contamination of aquifers	Elaboration of EIA that highlight these alternatives
Increase in Inhamua Mangrove Deforestation	➢ Prohibition on the use of mangrove poles for building and maintenance, and as fuel wood for tourist facilities,	Elaboration of norms
Dune Erosion	➢ Restriction of the movement of motorised vehicles on the beaches and dunes. This action includes the opening of access routes from behind the primary dunes (longitudinal paths, along the coast), where there should be some transverse paths to facilitate the access of tourists and local communities onto beaches for launching boats, swimming, recreational fishing, collation of invertebrates, etc. ➢ Prohibition of installation of tourist facilities on the primary dunes (fore dunes between the former Combinado Pesqueiro to Lighthouse should not be used for any infra-structure, due to their bad condition. They should be reforested). Some exceptions, however, should be considered based on the use of environmental friendly technology. ➢ Restriction on cutting of wood and poles and production of charcoal for tourism facilities and local communities. In this case there is a need to protect vulnerable areas, where none of these activities are to be permitted. Also there is need to create areas for production of fire-wood (intensive reforestation zones), for use in the tourism industry and local communities, but that does not promote environmental degradation and represents an income for local communities. This last point could minimize community conflict while maximizing the protection of vulnerable areas. ➢ Prohibition of agriculture in the primary dune areas, including the practice of burning. There is potential for the promotion of this activity in areas of major agriculture potential, such as swamps, where the environmental impacts can be mitigated. This includes	Application of the law in force and elaboration of norms

	the control of the opening of drainage ditches for the passage of rain water, and the effective application of fertilizers and pesticides, to reduce the chances of salt water intrusion and contamination of aquifers. ➢ Limitation on quantity of goats per family in sensitive areas, in order to regenerate the natural vegetation. It is also necessary to control the access and opening of pathways in dunes leading to the beaches, to minimize the occurrence of soil erosion. The opening of planned pathways to the beach could be the solution to minimize the above issue.	
Negative impacts on the biological communities (crustaceans, turtles, etc) found on the beaches	➢ Restriction of the movement of motorised vehicles on the beaches and dunes. This action includes the opening of access routes from behind the primary dunes (longitudinal paths, along the coast), where there should be some transverse paths to facilitate the access of tourists and local communities onto beaches for launching boats, swimming, recreational fishing, collation of invertebrates, etc.	Application of law in force and elaboration of norms
Noise Pollution	➢ The movement of motorised vehicles (4x4s, etc) through the villages, should be done within the pathways and only during daylight.	Elaboration of norms
Negative impacts on juveniles and reproduction of fish and crustaceans	➢ Prohibition of trawl fishing on the Barra beach, at least, during the main reproductive season. ➢ The installation of fish traps in the Inhamua mangrove should not be done across the channels in a mode that prevents the free circulation of marine organisms into the mangrove and vice-versa.	Elaboration of norms
Negative impacts on the corals	➢ Prohibition of any type of fishing and collection of invertebrates in the reef areas. ➢ Determination of the number of diving centres in TBT, their capacity and the establishment of a code of conduct that needs to be complied with by all divers	Elaboration of norms
Over-exploitation of fish and sedentary crustaceans	➢ Establishment of fishing quota, per tourist, per day, including the prohibition of the sale of the catches by tourists	Application of the law in force
Increment of exploitation of invertebrates	➢ Prohibition of the use of invertebrates as building material	Elaboration of norms
Salt water intrusion in certain swamps	➢ Prohibition of indiscriminate opening of drainage ditches for rainwater in the swamps. Ditches should be opened allowing for the uni-directional movement of water to the sea	Elaboration of norms

Case 6.3 SEA of the Great Western Development Strategy, China

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A number of regions in eastern and central China have undergone rapid economic development in the last decade, but China's western regions remain relatively poor and underdeveloped. In response, the Chinese Government's "Great Western Development" (GWD) strategy provides a strategic framework linking over 20 national policies and a range of key construction projects. The SEA of the GWD Strategy (GWD SEA) was commissioned by the State Environmental Protection Administration (SEPA). The aim was to examine environmental consequences and risks, and investigate possible modifications to specific elements of the strategy.

China's Western Region

China's 'Western Region' includes 12 provinces, autonomous regions and municipalities: Shaanxi, Qinghai, Ningxia, Xinjiang, Gansu, Sichuan, Chongqing, Yunnan, Guizhou, Tibet, Inner Mongolia and Guangxi. The region hosts a diverse range of ecosystems, communities and economic activities. It covers 6.6 million sq km (68 % of the country's land area) and has a population of 355 million people (27.4% per cent of the total population of the nation) including a large proportion of China's minority cultures[22].

A number of regions in eastern and central China have achieved rapid economic development in the last decade. This transition has had a profound impact on these communities, increasing job opportunities and access to new technologies, and contributing to significant advances in education and healthcare. It has also had significant social and environmental impacts, including ongoing challenges relating to pollution, environmental degradation and access to natural resources. In contrast China's western region remains relatively poor and underdeveloped, with significantly higher incidence of poverty (per capita GDP for the region is 50-75% of the national average). Low soil fertility, highly variable rainfall and severe wind erosion present significant challenges in many areas. However, the region also has considerable untapped human and natural resources. It is said that more than half of the country's identified natural resources are in the western region. Sustainable economic development of these resources has the potential to significantly reduce underdevelopment and poverty. However, a range of social and environmental impacts and risks require considered examination.

The Great Western Development Strategy

The goal of enhancing sustainable economic development in the western region has attracted significant interest in recent years. In 1999, the Chinese Government announced its official plan to develop western China. Its goal is to try to achieve a satisfactory level of economic development in the western part of the country in a five- to ten-year time-frame and to establish a "new western China" by the middle of the 21st century.

In October 2000, the Fifth Plenary Session of the Central Committee of the Communist Party of China (CPC) agreed that "the distributions of productive forces should be rationally readjusted for the benefit of the strategy of developing China's western areas" and that "efforts must be intensified to improve infrastructure, protect the environment and strengthen control of population growth and resources so as to maintain sustainable development"[23]. Chinese Premier Zhu Rongji is quoted as saying that "western development is of great economic and political significance and needs several generations' persevered efforts; we should seek every opportunity to implement the western development strategy to achieve a coordinated development among different regions of the country"[24].

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[22] Chinese Academy of Environmental Planning (November 2002) Strategic Environmental Impact Assessment of the Great Western Development Strategy in China – Interim Report. Page 2

[23] China Daily, October 12, 2000:1 cited in Millennium Ecosystem Assessment (2002) Integrated Ecosystem Assessment of Western China, (**http://www.millenniumassessment.org/en/assessments/a.china.htm**) Page 3

[24] China Daily, October 12, 2000:4 cited in Millennium Ecosystem Assessment (2002:3)

The GWD Strategy includes a range of public policy instruments – with links to over 20 national policies and range of construction projects. At the most 'strategic' level, a range of policies address issues such as foreign investment, infrastructure development, natural resource management, energy, telecommunications, education and urbanisation. Major projects currently envisaged include: a south-to-north water diversion, a west-to-east natural gas transfer, a west-to-east power transmission and the construction of a Qinghai-Tibet Railway. These massive infrastructure projects have generated great concern among some observers within China and, perhaps more vocally, outside the country, about the potential impacts on the environment and minority cultures.

The Chinese Government is in the initial stages of implementing policies and projects in accordance with the GWD strategy. Additional policies and initiatives are being formulated, and there is significant potential to influence to development and execution of the strategy over the coming years.

The purpose of the GWD SEA

The Chinese Government has listed "strengthening eco-environmental protection and construction" as one key work area in its agenda. A feature of this commitment is the application of environmental impact assessment (EIA), and strategic environmental assessment (SEA). In October 2002, China passed an EIA law requiring SEAs of plans and programs in a several sectors including the energy sector, transportation, etc.(see Box 6.23).

The GWD SEA was commissioned by the State Environmental Protection Administration (SEPA) - the "Ministry of Environment" in China. SEPA is interested in examining environmental consequences and risks of the GWD strategy in order to suggest modifications to the concrete elements of the strategy. With its extremely long-term perspective and broad scope, the implementation of the GWD can accommodate modifications if, for instance, harmful environmental consequences are pointed out. This is one reason why SEPA wishes to bring the environmental consequences of the GWD to the negotiating table with other line ministries. Another important concern for SEPA is to prepare environmental impact mitigation measures for certain aspects of the GWD.

The project team, supported by the World Bank, consisted of researchers from the Chinese Academy for Environmental Planning, and Beijing Normal University. ECON (the Norwgeian Centre for Economic Analysis) provided scientific advice to the team. The GWD interim SEA report "analyses in detail some factors of environmental impacts from GWD, briefly analyses the environmental impacts of certain specific policies, and proposes necessary counter measures to be adopted to alleviate the environmental impacts". It also includes a case study of the Guizhou Province. More broadly, the GWD SEA makes a contribution to the development of SEA capacity in China.

SEA Methodology

The SEA applied a relatively simple methodology involving coordinated analysis of the possible impacts associated with the implementation of the GWD strategy. This analysis focused on broad range of environmental media, The interim report includes chapters on water, air and biodiversity, land resources, and social impacts.

The project team used expert panels (the Delphi method). to examine both 'direct' (predominantly intended) and 'indirect' (predominantly unintended) impacts of the strategy). They also explored alternative impact mitigation options.

Sector-based studies also applied a range of additional techniques. In the case of water resources, the analysis was supported by a demand gap analysis, projecting the likely gap between water demand and available water supply as the region develops and demand grows.

Significantly, the case for increasing public participation and stakeholder dialogue was briefly explored in the report. But there were no references to any formal mechanisms for public participation within the SEA process. It is therefore unclear to what extent the SEA report addresses specific concerns highlighted by some key stakeholders.

Interim Results

As noted, the interim report explores a range of direct and indirect impacts arising from activities proposed in accordance with the GWD. The matrix of possible direct and indirect environmental impacts is very complex and involves a large number of factors. Nevertheless, a simple message emerges from the analysis: the environmental situation in China's western provinces is already serious, and aspects of the GWD tend to exacerbate some crucial environmental risks. For instance, the increased water demand that follows from the GWD will increase the pressure on scarce groundwater resources. Water pollution is also projected to increase, putting pressure on water quality. Biological diversity faces pressure from large infrastructure projects as well as from urbanisation in general.

The prognosis for emissions to air is slightly more optimistic on the basis that technological development could substantially reduce emissions. On the other hand, various forms of economic development and industrialisation have the capacity to significantly increase emissions.

Each chapter of the interim report explores a range of mitigation measures that authorities could apply to alleviate these pressures. But additional work is required to quantify the effectiveness of these measures. The case study of the Guizhou Province focuses on some of these issues and responses in detail, although further work is required in order to strengthen the analysis in this chapter.

Conclusions

Arguably the ultimate test of the effectiveness of the GWD SEA study will be its capacity to influence audiences and institutions involved in the development, implementation and monitoring of the GWD Strategy. At this stage it is difficult to ascertain whether the SEA process has increased awareness and appreciation of environmental impacts associated with the GWD proposals. The breadth and scale of the GWD strategy has made it difficult to isolate specific proposals for detailed investigation. Further work on the draft report is required if it is to effectively articulate the case for a stronger focus on environmental threats and opportunities.

At this stage it is unclear whether the GWD SEA process will move into a second phase. As noted, there is an imminent need to strengthen SEA capacity in China. One option being explored is to organise training courses for SEA practitioners, drawing on experience with several recent SEA initiatives[25]. The lessons learned in preparing the GWD SEA will provide an important source of experience and expertise in this regard.

[25] For more examples and a review of the Chinese SEA experience to date see Che Xiuzhen, Shang Jincheng and Wang Jinhu (2002): Strategic Environmental Assessment and its development in China, *Environmental Impact Assessment Review*, 22, 101-109.

Case 6.4: SEA for Second National Development Plan, Namibia

(Based on reports by Brian Jones (2001 a, b)[26],

The process to develop Namibia's Second National Development Plan was supported by a project to integrate sustainable development concerns. The approach followed use elements which can be regarded as equivalent to an SEA.

Background

Namibia gained its independence from South Africa in 1990. But the legacy of *apartheid* and colonial rule is still evident in the wide gap between rich and poor, unequal access to land and natural resources, poor education, health and housing for the rural majority. Development is constrained by the semi-arid to arid climatic conditions. The lack of water and often fragile environment makes strategic planning for sustainable development particularly important. Attempts to link environment and sustainability to national planning processes reflect a growing awareness of the environmental constraints to development in Namibia.

In 1991, the then Ministry of Wildlife, Conservation and Tourism launched a process to develop a Green Plan for Namibia (Brown 1992). This set out a cross-sectoral and multi-disciplinary approach to environmental management. It was the first attempt to initiate processes and actions linking environmental issues and sustainable development[27]. About the same time, the government launched the First National Development Plan (NDP1) setting out the country's development objectives and strategies for the first five years after independence. But the NDP1 did not address environmental and sustainable development issues. These two strategic frameworks were not linked and were developed in parallel.

In designing the process to develop the Second National Development Plan (NDP2), the government decided to integrate environment and sustainable development issues into the national planning process – thereby bringing the issues, concerns and recommendations contained in the Green Plan into mainstream economic and development thinking. The NDP2 was due to become effective on 1st May 2001.

Second National Development Plan process

The First National Development Plan (NDP1) was almost entirely written by foreign experts. Development of the Second National Development Plan (NDP2) was initiated in mid 1999. It was coordinated by the National Planning Commission Secretariat (NPCS). Draft chapters on sector development plans and cross-cutting concerns were contributed by line ministries, regional and local government authorities, and other government bodies. The line ministries established Sectoral Planning Committees to prepare action work plans for drafting their respective chapters.

The methodology developed for working groups to review and screen clusters or related chapters involved:

- discussion of the sector mission statements of all chapters in the cluster and checking these for consistency with the framework chapters (National Development Objectives and Strategies);

- review of each chapter's objectives, targets, strategies and private sector investment programme (PSIP) to:
  - analyse whether the objectives related to the overall NDP2 objectives,

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[27] The Green Plan set out key issues and strategies for ensuring environmental health, sustaining renewable natural resources, protecting biodiversity and ecosystems, and contributing to global environmental security. It also focused strongly on the promotion of environmentally responsible decision-making; and addressed overall national development issues such as poverty and its links to environmental problems as a major threat to sustainable development (Brown 1992).

- whether the targets covered/related to all the objectives,
- whether the strategies were appropriately designed to achieve the objectives, and
- whether the PSIP fully captured the objectives, targets and strategies.

- particular attention to special concerns such as poverty reduction, employment creation, environmental and sustainable development aspects.

In practice, there was insufficient time to follow this approach adequately. However, a range of useful comments were made and further key issues and links between sectors were identified.

Integration of sustainability issues in NDP2

The Ministry of Environment and Tourism (MET) and the National Planning Commission Secretariat (NPCS) initiated a joint project in 2000 to strengthen the national development planning process by integrating sustainable development concerns in NDP2. DANCED supported the project and interacted at key stages of the NDP2 process.

The project promoted multi-stakeholder processes which generated strategic contributions to the NDP2. The aim was to ensure that the cross-cutting aspects and sector-specific aspects sustainable development priorities and targets were fully incorporated into the NDP2. The approach involved several phases (Table C6.4.1).

Table C6.4.1: Phases in NDP2 support project, Namibia

PHASE	ACTIVITIES
Phase 1: Audit of the Green Plan and NDP1 (by consultants)	• An assessment of the incorporation of Green Plan principles/actions/initiatives into NDP1, and the achievement of the two plans against their objectives and contribution to sustainable development; • Identification and analysis of the 10 main threats to sustainable development in Namibia, their root causes, and responses to them.
Phase 2: Development of a shared vision of sustainable development for NDP2	• 18 sector issues /options papers prepared identifying key SD and cross-cutting issues; • Papers used to inform series of multi-stakeholder cluster (related sectors) workshops: natural resources; social; trade & industry; infrastructure and institutions.; • Workshops developed cross-cutting issues and vision statements; • Inter-cluster workshop to consolidate cross-cutting issues and develop SD vision for Namibia.
Phase 3: Support to drafting of 4 chapters for NDP2 for Ministry of Environment and Tourism	• MET decided to draft chapters itself, except for cross-cutting issues.
Phase 4: Screening draft NDP2 chapters (written by line ministries) against SD priorities and targets	• Consultants reviewed draft chapters, using crossing-cutting issues and vision statements identified by cluster workshops, and looking for gaps (issues not covered).
Phase 5:	

Assistance to NPCS to consolidate draft NDP2	• Technical assistance to NPCS on incorporating consultants' review comments; • Support to dialogues, roundtables, consultations on draft NDP2; and focused discussions with key officials in NPCS on specific issues & sectors; • Identification of capacity constraints to natural resource management under NDP2 framework; and recommendation of redial interventions.

Cluster workshops

A central feature of the project was the organisation and facilitation of workshops for four clusters of related sectors:

- *natural resources* (agriculture, water, land, wildlife, tourism, fisheries and forestry);
- *social* (health, education, labour and social services);
- *trade and industry cluster* (energy, industry, financial services, mining, and trade); and
- *infrastructure and institutions* (communications, housing, regional administration, and transport).

These workshops were multi-stakeholder events, each attended by representatives from a broad range private sector companies, NGOs and government agencies (including some of the focal persons for drafting NDP2 chapters from line ministries, and NDPC planners). They served to generate a common understanding of sustainable development. An inter-cluster workshop was organised to consolidate the identification of cross-cutting issues identified by the individual workshops. I also agreed on a national vision for sustainable development: "sustainable and equitable improvement in the quality of life of all the people in Namibia".

Chapter screening

Consultants all used a common gap-consistency-conflict analysis approach to screen the draft chapters of NDP2. Each chapter was analysed in terms of :

- compliance of draft chapters with guidelines for preparing sector chapters;
- technical soundness;
- consistency between sectoral and national policies; and
- comments made on chapters by NPCS planners and other experts (e.g. the DANCED project reviewers);

and was assessed for:

- consistent and coherent coverage of relevant cross-cutting issues (as identified during the cluster workshops) in the chapter's objectives and priorities;
- inconsistencies or areas where sectoral approaches (within clusters of related chapters) conflicted, failed to address major threats to sustainable development, or ran counter to the national vision (as agreed by the inter-cluster workshop).

The screening process was hindered by slow and 'last minute' submission of chapters by line ministries.

Consultants reviewed the results of the screening process. They incorporated revisions and new material into the chapters and discussed these changes with line ministries and NPCS planners in order to reach agreement. Cross-cutting and sustainable development issues were then incorporated and a draft NDP2 was circulated for broad comment.

A national workshop and regional consultations were organised to review the draft document. The national workshop was attended by government officials (particularly those responsible for drafting

chapters), consultants advising ministries, and representatives of NGOs and CBOs. It involved both plenary and facilitated working group sessions to discuss clusters of chapters.

A final revised draft was submitted to Cabinet and approved by Parliament in 2002

Main outcomes

A number of positive aspects of the support project can be identified.

- The alliance between the Ministry of Environment and Tourism (MET) and the NPCS proved a useful mechanism for including environment and sustainable development issues in NDP2. The MET had a strong agenda reflected in the original Green Plan. But it was unable to implement this agenda effectively (apart from activities within its own remit) because of its relatively low status in the government hierarchy. Working closely with NPCS gave MET an opportunity to directly influence mainstream development planning.

- The use of consultants to carry out much of the work enabled much to be achieved within a relatively short period of time, and filled a capacity gap within the Department of Environmental Affairs.

- The project ensured continuous liaison between the DEA and NPCS.

- The sector issues and options papers provided useful background material. They were used by the sectors to identify major cross-cutting issues affecting sustainable development and provided initial discussion points in the cluster workshops.

- The cluster workshops proved to be effective mechanisms for a) exposing a broad range of stakeholders to the concept of sustainable development and key cross-cutting issues; b) helping the different sectors to recognise the inter-relatedness of their activities with other sectors; and c) stimulating ideas about how better co-operation and integration can be achieved.

- Some line ministries were receptive to review comments on their chapters; others were defensive and less willing to make suggested changes to incorporate environmental and sustainable development concerns.

The approach appears to have made some impacts on the sustainability thinking within the National Planning Commission Secretariat (NPCS). There was been a noticeable increase in awareness of sustainable development and cross-sectoral issues among the NPCS planners that attended the various cluster and inter-cluster workshops. Some of them were enthusiastic participants in the workshop processes. They appear to have a better understanding of the broad complexity of sustainable development and were able better to incorporate sustainable development issues in the overall national planning processes.

The NPCS indicated that it was keen to use the sector cluster approach and emphasis on cross-cutting issues as a foundation for future planning and monitoring activities, and that it would extend it to the preparation of the national budget.

A number of outcomes are evident regarding the Second National Development Plan:

- the vision of sustainable development developed through the cluster workshop process was adopted as the Vision of NDP2;
- the President's foreword to NDP2 highlights "promoting environment and ecological sustainability" as one of the six key strategies of the plan. The enhancement of environmental and ecological sustainability is included as one of the plan's nine National Development Objectives;
- NDP2 makes clear links between the four pillars of sustainable development: environment, economic development, social development and institutional development;=
- the need to address development issues in an integrated way has begun to be accepted by officials in line ministries and other stakeholders;

- sustainable development has been adopted as a key national development objective. Strategies to achieve sustainable development contained in NDP2 include efforts to explore the potential of alternative energy forms and community-based approaches to natural resource management; and
- the importance land reform and redistribution as well as wise land management is also recognised.

Case 6.5: SEA for Water Use, South Africa

Sources: Paper available on the DWAF website **www.dwaf.pwv.gov.za/sfra**); and personal communications from Mike Warren and Gavin Quibell (DWAF).

SEA has had considerable influence on planning water allocations in South Africa. The National Water Act (No 36 of 1998) abolished the concept of 'private water'. It requires that catchment resources be allocated first and foremost to meet primary or basic human needs, the environmental reserve and international obligations. The Act established 19 Water Management Areas (WMAs), each to be managed by a Catchment Management Agency (CMA). In addition, it empowers the Minister of Water Affairs to declare *Stream Flow Reduction Activities* (SFRAs). These can be any land-base activity (including cultivation of any particular crop or other vegetation) that significantly impacts on the stream flow of a river or stream. At present, only forestry is a declared an SFRA. Other activities that might be viewed as SFRAs in the future include: dryland agricultural cropping, veld[28] improvement, alien invasives, and, possibly, stock watering dams and small farm dams. Impoundments (storage) are already viewed as a "water use" by the National Water Act – an alternative would be to change the minimum size required for licensing storage to include smaller farm and stock watering dams. This can also be done on a specific catchment basis. The Catchment Management and Poverty Alleviation (CAMP) programme (funded by DFID) has, however, suggested that dry land agriculture actually actually increases stream flow over natural veld.

In 1994, the Department of Water Affairs and Forestry (DWAF) first committed itself to undertake work on SEA in the Eastern Cape. In 1997, it embarked on an 'SEA for forestry' initiative. Its principal objective was to provide a framework for decision-making to take into account national and regional needs as well as to consider the cumulative impacts of forestry development. There was concern within the forestry industry about perceived discrimination. This led to a widening of the scope of the project to include other SFRAs. The purpose of the SEA for SFRA is to provide an effective, transparent and equitable 'negotiation and decision support system' for the sustainable development of SFRAs that acknowledges other water uses.

The process evolved further with inputs from the Danish Development Agency (DANCED) – now incorporated within DANIDA - and through widespread consultation with stakeholders. Two large provincial *indabas* (participative gatherings) were held in KwaZulu-Natal and the Eastern Cape, respectively. In late 1998, the UK Department for International Development (DFID) agreed to fund a two-year first phase of an SEA for SFRAs. DWAF organised a workshop on the SEA with the focus on forestry. This brought together some 50 role-players with an interest in the use of the SEA process for forestry and possible other land uses. One outcome was that SEA should include all possible SFRAs – not just forestry. A third *indaba* was held in Mpumalanga in 1999 with a focus beyond forestry.

After protracted debate, the project team finalised a logical framework analysis (LFA) for the process. Each team member assumed responsibility for at least one output and its associated activities and tasks. The technical work was to be supported by a GIS.

The main aim of the SEA was to provide an information base and decision-making framework to ensure that relevant sections of the National Water Act are implemented with regard to SFRAs. The SEA would not, itself, make decisions, or plan what should happen in a catchment. Its role was to provide information and ideas, which could then be used to guide those plans and decisions.

A key component of the process was to establish a framework for negotiation. The SEA had several aims:

- contribute to the development of the National Water Resource Strategy;
- provide support for the development of Catchment Management Strategies and Plans at Provincial and Water Management Area levels - by new Catchment Management Agencies (CMAs) supported by Advisory Committees;
- assist the licensing of applications for SFRAs in local areas.

[28] Veld: a South African term meaning open, unforested or thinly-forested, grass country.

So the SEA was designed to be tiered and nested. The function of the SEA and the type of information provided and required varied for four distinct levels:

- the broad national picture;
- provincial/Water Management Areas (WMAs);
- focus areas/catchments (sub-divisions of WMAs); and
- local areas (relating to water use licensing)

Some of the key outputs from this process are listed in Table C6.5.1

Table C6.5.1: Key elements of the SEA process for SFRAs

COMPONENT OF THE NATIONAL WATER ACT	SEA ACTIVITY/PRODUCT
National level • Interference with other areas of government policy and national standards. • Declaration of SFRAs (NWA, Ch 4, Part 4). • National Water Balance Model (NWBM). • National Water Resource Strategy (S5). • Setting water resource and water quality objectives – Resource Quality Objectives. • Determining the reserve (basic human needs and ecological reserve). • Prevention of pollution. • Licensing and regulation of water use Pricing strategy.	• National policy review. • Definition of SFRAs. • National level screening. • Analysis of national/regional significance of SFRAs as a contribution to NWBM. • Contributing to understanding of the relationships between SFRAs and other forms of water use. • Making recommendations on appropriate measures for dealing with SFRAs at national level.
Provincial/regional/local levels • Water Management Areas (WMAs) and Catchment Management Agencies (CMAs).	• Providing an overview of the impact of SFRAs within each WMA/CMA area and the constraints/opportunities for meeting NWRS aims and objectives. • Exploring the interface between SFRAs and regional plans and policies being developed by other institutions. • Developing a framework for public participation, consultation and communication.
Catchment level and local • Catchment Management Strategies (CMSs). • Developing Water Allocation Plans.	• Giving guidance on how CMAs should take SFRAs into account in developing CMSs. • Producing a framework for negotiation and decision-making on individual SFRA applications for permits/licences. • Providing a detailed database on biophysical, social and economic indices for Priority Focus Areas.

The main steps in the SEA process can be summarised as:

- *policy appraisal* – analysis of the requirements of the various existing laws that have a direct or indirect impact on SFRA development;
- *establishing a work programme* – discussion of the goals and objectives of the process; tasks to be addressed; budget; timetable and products; staffing plan; and cooperating agencies;
- *definition of the scope of the SEA* – physical limits; impacts addressed; and alternatives;
- *establishing a framework for public participation and consultation* –workshops; distribution of information through the printed and electronic media;
- *Setting up a database* – establishing data requirements; collection of baseline data; managing data base;
- *Manipulaing and analysing data* – establishing criteria and weightings; identifying costs and benefits; queries;
- *Impact synthesis and evaluation* – weighing of costs and benefits; creating scenarios; testing sensitivity of options;
- *Empowering relevant organisations and individuals to use the Negotiation & Decision Support System* (NDSS) – including DWAF regional offices, Catchment Management Agencies, Advisory Committees, and other relevant organisations;
- *Establishing a monitoring and auditing strategy* – appointing steering committee, project review committee, and specialist review group;
- *Publishing the results*.

One of the tasks of the SEA project team was to elicit the principles used in determining SFRAs and then to assess the scope of candidate activities in terms of their possible declaration as SFRAs.

The Department of Water Affairs and Forestry (DWAF) has now fully embraced the concept of SEA as a tool for use in catchment planning and management, and as a support to the National Water Act (NWA, No. 36 of 1998), with the following specific objectives:

- to ensure best use of water in an integrated way to most benefit society and the economy without degrading the environment (i.e. the beneficial use of water in the public interest[29]);
- to encourage people to become involved in catchment affairs and to link users with decision-makers;
- to assess and analyse data from the catchment; and
- to provide decision-makers with reliable data from the catchments for more informed decisions.

National-level screening (NLS) was undertaken to identify how both existing and potential SFRAs related to the most heavily stressed parts of the country (in terms of the balance of water availability and demand). NLS aims to become an iterative process. An initial review was undertaken between December 1998 and March 1999. It identified priority regions for investigation through the SEA process, and indicated that forestry, sugar cane, maize and fibre crops were the key land and water uses that needed to be considered. The water requirements for these crops were assessed and related to information on soil types, relief, climate, rainfall and evaporation. Maps were then produced showing the distribution of forestry SFRAs (the only existing ones) and potential SFRAs. The national screening also produced a range of other maps of the country: identifying views or visions for the future – for SFRAs and for supply and demand of resources (eg water); indicating where development is likely to be constrained; and indicating where development is most needed. A database was compiled and a document produced setting the values and context for each sector. Based on this analysis, the SEA team recommended that attention be focused on four provinces: Northern, Mpumalanga, KwaZulu Natal and Eastern Cape.

[29] The National Water Act is founded on promoting the beneficial, efficient and sustainable use of water in the public interest.

It was then decided to select a specific secondary catchment where a pilot project SEA could provide more in-depth screening thorough involving stakeholders and role-players. So, an "SEA for Water Use Study" was first undertaken in the Mhlathuze Catchment in KwaZulu Natal. A controversial report on this SEA was released in 2000 which noted that:

- the catchment was under water stress and there was no surplus for allocation to new users (current thinking is that this stress in only on paper!);
- local communities were not represented at decision-making forums and committees; and there was a need to get people to debate their different needs, demands and visions face-to-face; and
- There was an historical inequity in allocating water resources between to established commercial sectors and the community.

Many of the findings and lessons arising from the SEA were 'absorbed' by various divisions within the Department of Water Affairs and Forestry (DWAF), notably the Water Resources Planning Group, the Directorate Catchment Management, and the Forestry Development Team. The latter has been examining the utility of SEA.

As a follow-up, a proposal was made for an SEA at the much larger scale of the Water Management Area (WMA) level. Here, SFRA developments are likely to have significant impact on water resources, and possible on other development (and vice versa). During this process, the provincial context, legislation and political views would be take into consideration. The next step therefore was an SEA of the Usutu-Mhlathuze Water Management Area (WMA) (see Figure C6.5.1), funded by DWAF and DFID. This SEA commenced in October 2000, for completion in 2004 (the final report is expected to be completed by mid year). One of the aims was to determine the most effective level or scale of SEA and to provide a template for further SEAs in other WMAs.

Research studies were commissioned under the SEA on hydrological, social, hydro-economic and biophysical issues important in the Usutu to Mhlathuze WMA:

- *Social component*: aimed to evaluate water related and non-water related issues and to ensure stakeholder participation. Public participation workshops were organised in various areas to identify more about water-related and other issues; and to enable local communities to engage in the SEA and decision-making processes.

  The SEA identified several major stakeholder groups:
  - DWAF national and regional offices;
  - Private sector: forestry, mining, agriculture including sugar;
  - Government/public sector: national and provincial government departments, provincial and local government institutions (metro, district councils and municipalities), traditional authorities; and
  - Parastatals: water and irrigation boards, water users associations.

- *Biophysical component*: aimed to accurately describe the potential of the physical environment and biodiversity. This involved developing a Biobase (map overlays identifying important areas for conservation and endangered/rare species) for the WMA and creating biophysical land use potential maps using GIS.

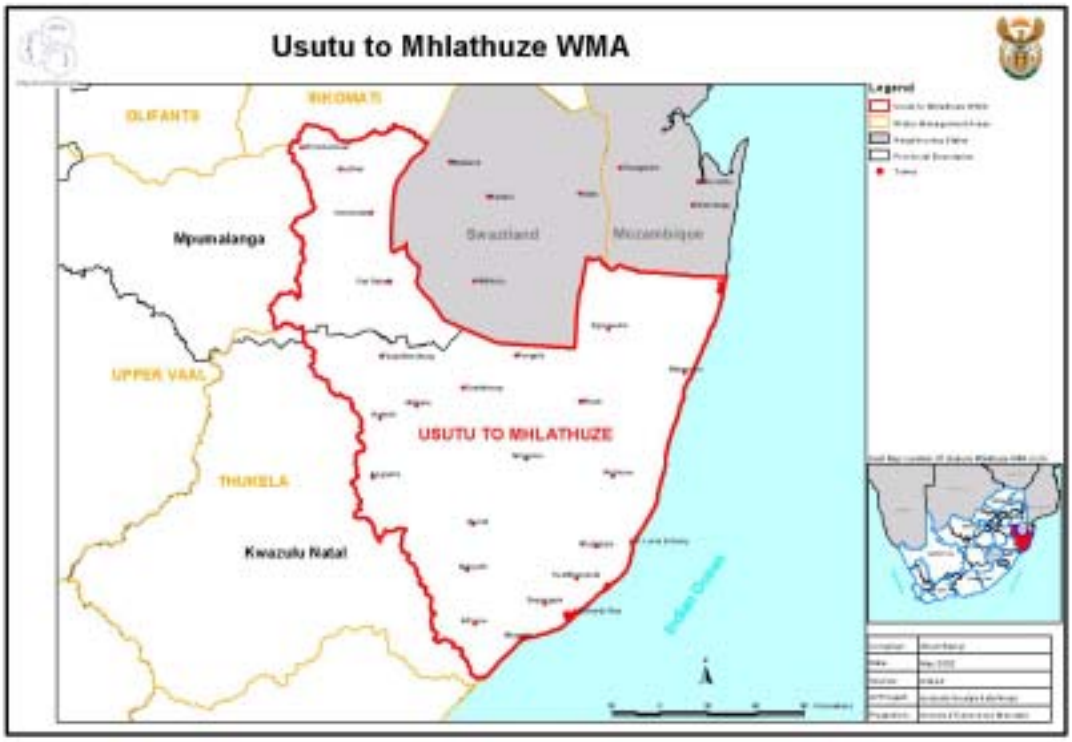
- *Hydro-economic component*: aimed to provide information to allow decision-makers to weight hydrological and economic impacts using the Decision Support System (DSS).

A range of sub- reports on these studies are available on the DWAF website (www.dwaf.pwv.gov.za/sfra).

DWAF has adopted SEA to support decision-making on further afforestation in the Eastern Cape Province. A tender has been issued for such a project and an SEA study is planned. A complimentary biobase may also be launched together with the provincial Environment Department (if not existing). There is a renewed thrust to see at least 100 000 hectares of land, largely communally held, afforested over the next few years. Significant efforts in this regard were made in the late 1990's little, but little has actually happened due to environmental objections and uncertainties concerning social impacts.

The SEA in the Usutu-Mhlathuze has shown that decision-making about specific land parcels requires a very fine scale of resolution. The current approach is to focus on specific areas that appear to be suited to forestry (10 000 – 20 000 hectares) but within a research process setting the context at the scale of the Water Management Area.

Figure: C6.5.1: Usutu to Mhlathuze WMA: Location



Case 6.6: Transboundary environmental assessment of the Nile basin

Sources: **www.nilebasin.org/overview** (executive summary), NBI (2001), and edits provided by Gedion Asfaw (Project Manager of Nile Transboundary Environmental Action Project) and Astrid Hillers (World Bank, AFTSD, Nile Team)

The Nile Basin covers 3million km^2 – 10% of Africa, and is shared by 10 countries: Burundi, Democratic Republic of Congo, Egypt, Ethiopia, Eritrea, Kenya, Rwanda, Sudan, Tanzania and Uganda. The total population is 300 million people, with 160 million in the basin itself (2000 figures). Despite its natural endowments, the region faces severe challenges: poverty, instability, rapid population growth and environmental degradation. Yet the Nile holds opportunities for cooperative management and development which could serve as a catalyst for greater regional integration. Recognising this, in February 1999, the Nile riparian countries established the ***Nile Basin Initiative*** (NBI) to fight poverty and promote socio-economic development in the region. The initiative is guided by a Shared Vision "*to achieve sustainable socio development through the equitable utilisation of, and benefit from, the common Nile Basin water resources*"

The initiative provides a unique forum for the countries of the Nile to move forward in a cooperative process to realize tangible benefits in the basin and build a solid foundation of trust and confidence. The Nile-COM serves as the highest decision-making body of the NBI. Chairmanship of the Nile-COM rotates annually. The Nile-COM is supported by the Nile Technical Advisory Committee (Nile-TAC) comprising two senior officials from each member country. Since 1999, the NBI Secretariat (Nile-SEC) has operated from Entebbe, Uganda.

The Nile countries seek to realise their shared vision through a basin-wide Strategic Action Programme. This comprises two complementary programmes:

- the basin-wide Shared Vision Programme – to create an enabling environment for cooperative action through building trust and confidence;
- subsidiary action programmes - to plan and implement investments and activities on the ground at the lowest appropriate level,. These take into account the benefits from, and impacts of, these activities in all riparian countries of collaborative action, exchange of experience and capacity-building.

The Shared Vision Programme (SVP) comprises eight basin-wide projects:

- Nile Transboundary Environmental Action:
  - to provide a strategic framework for environmentally sustainable development of the Nile River Basin; and support basin-wide environmental action linked to transboundary issues in the context of the Nile Basin Initiative Strategic Action Programme;
- Nile Basin Regional Power Trade;
- Efficient Water Use for Agricultural Production;
- Water Resources Planning and Management;
- Confidence-Building and Stakeholder Involvement;
- Applied training;
- Socio-Economic Development and Benefit-Sharing; and
- SVP coordination.

The preparation of the projects within the SVP project portfolio was driven by the institutions of the NBI. It involved the active participation of more than 70 technical experts (including eight technical specialists from each of the nine countries) in a range of water-related sectors from across the Basin. For many, it was the first time that they have discussed common concerns and potential opportunities with their colleagues from neighbouring and co-riparian countries.

Betewwn February 1999 and March 2001, the SVP evolved from four thematic areas, or pillars (as described in the *NBI policy guidelines)* to a coordinated basin-wide programme. The process was executed and coordinated by the Nile Secretariat (Nile-SEC). It involved the active participation of, and guidance, from the Nile Technical Advisory Committee (Nile-TAC), and received formal endorsement by the Nile-COM at critical milestones

An International Consortium for Cooperation on the Nile (ICCON) was established to provide long-term partnership forum between the Nile Basin States and the international community. It first met in June 2001in Geneva. At this first ICCON meeting, funding was pledged to support the projects of the SVP.

The transboundary environmental assessment

Under the SVP, a transboundary environmental assessment (TEA) has been carried out by the Nile riparians (NBI 2001). It includes a collective synthesis of basin-wide environmental trends, threats and priorities, and outlines the elements for a long-term agenda for environmental action for the Nile Basin. The TEA aims to be both a catalyst and a valuable resource to the Nile riparians and their international partners.

The TEA was initiated in December 1999 within the NBI's Shared Vision Programme. It was undertaken in cooperation with UNDP and World Bank, with additional funding from the Global Environment Facility (GEF). The main objective was to help translate existing national environmental commitments and interest into basin-wide analytical frameworks and, eventually, basin-wide actions. The emphasis was on stakeholder awareness and involvement, water and environmental management, training and education, capacity-building, information-sharing and institutional development.

Priority issues to be addressed at basin-wide, national and local levels were identified and analysed. The synthesis provided the basis to formulate the elements of an Agenda for Environmental Action with complementary preventive and curative actions to address current and emerging issues in the Nile Basin. The Agenda aimed for collaborative implementation over the next decade or more in coordination with other development activities. Finally, the TEA outlined transboundary activities to be addressed collaboratively in the initial implementation phase of the Agenda for Environmental Action in the form of a proposed project.

Several key transboundary environmental threats were identified:

- land degradation (deforestation, erosion, and downstream sedimentation, mining impacts);
- loss of wetlands and biodiversity (including loss of habitats, and poaching) and lake degradation;
- water quality degradation (including pollution, sanitation concerns, eutrophication, water weed infestation, and siltation); and
- lack of disaster preparedness and remediation (floods &droughts, refugee problems, climatic variability and uncertain impacts of climate change, navigation risks and aids).

The root causes of the threats identified by the analysis fell into various main groups:

- poverty; macro and sectoral policies;
- governance, institutional and capacity constraints;
- regulatory environment and lack of adequate land-use planning;
- unclear tenure and inadequate access to resources for local stakeholders;
- insufficient environmental education and awareness;
- limited access to environmental knowledge and information (including relevant scientific data);
- population growth;
- rapid urbanization; and
- climatic variability.

Two related sets of activities informed the report:

(a) Broad and participatory national consultations led by a national expert in each of the nine participating Nile countries, with findings and recommendations documented in national reports. These national consultations were carried out in parallel to assessments of priority needs in other sectors included in the SVP. They were all under the guidance of national Nile-TAC representatives with coordination by an international lead consultant. The national experts consulted with key stakeholders in national and local government agencies, NGOs, and research organisations, as well as people working on related projects and programmes. At least one workshop was held in each country to which a variety of stakeholders was invited. These consultations built on existing national environmental

planning processes within the countries as well as sectoral master plans, many of which were themselves based on broad consultative processes. The national experiences and reports were consolidated in the basin-wide analysis, through three basin-wide meetings. These were attended by the 15 drafting group members (consultants and technical experts from Nile government environmental agencies, donors and international organisations) as well as Nile-TAC members.

(b) Supported by USAID, a scoping study was undertaken for a multi-country technical background paper. This was based on readily accessible and public domain information supplemented by selected country visits. The latter were organised in cooperation with the national experts referred to above. Key findings from the scoping study were reflected in the TEA report.

Chapters in the final report cover:
- background and process;
- overview of key environmental resource and their uses;
- environmental threats;
- opportunities and an agenda for action;
- resource mobilisation and initial actions; and
- concluding comments.

And there are various annexes:
- basin-wide environmental threats;
- threats – ranked by priority and country;
- transboundary environmental analysis: common concerns by sub-region;
- environmental priority actions by country;
- stakeholders consulted during national processes;
- protected areas with transboundary significance;
- commitment to international conventions;
- environmental working group and Nile Technical Advisory Committee members;
- stakeholder involvement and participation;
- Nile Basin Initiative;
- Nile Basin Initiative glossary; and
- background documents and selected studies.

Transboundary Environmental Action Project

The TEA process prioritised transboundary environmental threats. These guided the formulation of a first basin-wide project for environmental action within the SVP. This Transboundary Environmental Action Project has been designed to encourage more effective basin-wide stakeholder cooperation on transboundary environmental issues in selected priority areas.

The expected outputs of the “Nile Transboundary Environmental Action” project are:
- enhanced regional cooperation on transboundary environmental and natural resource management issues. Elements include the development and application of a river basin model as part of a decision support system, knowledge management, and linkage of macro and sectoral policies and the environment;
- enhanced capacity and support for local-level action on land, forest and water conservation, and establishment of micro-grant fund to support community-level initiatives at pilot sites;
- increased environmental awareness of civil society through environmental education programmes and networking of universities and research institutions;
- enhanced regional capacity for sustainable management of wetlands and establishment of wetlands management programme at pilot sites; and
- establishment of standard basin-wide analytical methods for water quality measurements and initiation of monitoring of relevant transboundary hotspots. Enhanced capacity for monitoring efforts and pollution prevention.

Case 6.7: SEA in the South African National Ports System

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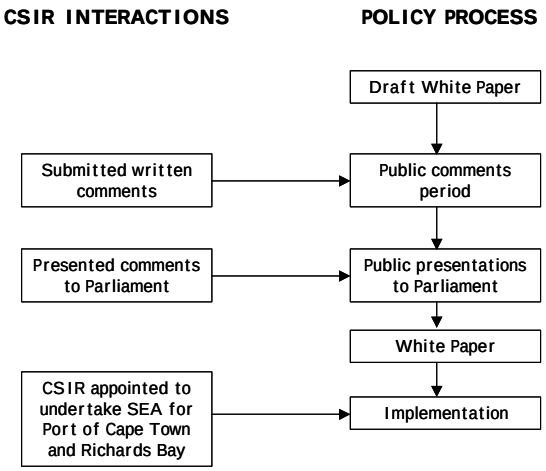
Integrating sustainability and SEA into the South African National Commercial Ports Policy

Background:

Transnet Limited is a public company with the South African Government as its sole shareholder. It is the holding company behind South Africa's largest transport businesses. Portnet was one of its nine business units with responsibility for the management and operation of South Africa's seven commercial ports. In line with the country's restructuring strategy of state-owned enterprises, Portnet has been temporarily divided into two main entities: the National Ports Authority (NPA) and South African Port Operations (SAPO). In due course, once the reorganisation of Transnet is finalised, the NPA will report directly to the Department of Transport as a new state-owned corporate entity. The NPA will act as the landlord of the ports. The role of the Ministry and Department of Transport with respect to commercial ports is to ensure that efficient and effective, seamless inter-modal transportation is achieved in the national interests of South Africa. To provide the policy framework within which the National Ports Authority will operate, a White Paper on National Commercial Ports Policy was drafted and circulated for public comment in October 2001.

The CSIR[30] recognised the need and importance of integrating sustainability aspects so that the ports policy would better facilitate sustainable port development, and provided comments in this regard. Figure C6.7.1 illustraes the policy-making process and key interactions during the process. The latter are discussed below.

Figure C6.7.1: Policy process and CSIR's interaction with the process



[30] The Council for Scientific and Industrial Research with a mandate to support government.

The CSIR identified the ports as a key target sector in which to promote planning for sustainable development. It undertook a programme of research on sustainable port development between 1997 and 2002. Numerous papers and discussion documents were presented at South African and international conferences. These were circulated amongst the planning, environment and engineering departments of the NPA. Some conference papers were written in collaboration with NPA staff. The use of environmental assessment and management tools such as EIA and SEA were promoted to ports staff as tools that could facilitate sustainable port development and operation. This research and interaction contributed to the NPA accepting the need to address sustainability issues in planning the development of ports, and identifying SEA as useful for this purpose.

Research conducted by CSIR over the past five years (Heather-Clark *et al*., 1998; Heather-Clark, 1999, 2000, 2002) shows that, for South African ports to move toward sustainable development, they need to make improvements in a number of areas:

- port-city relationships and cooperative decision-making,
- individual port relationships with stakeholders including port users, environmental stakeholders and the surrounding local communities,
- environmental management and data collection within the ports - so that it can be use proactively during the port planning process, and to inform future operations through the development of well informed environmental management intervention strategies,
- understanding of how ports impact on the livelihoods and quality of life of local communities,
- economic data collection and analysis (local, provincial, national and regional) for consideration during port planning processes, and
- reporting on 'triple bottom line' performance (i.e. how environmental, social and economic concerns have been addressed).

Commenting on the Draft White Paper on National Ports Policy

The policy was assessed and recommendations made on improving sustainability issues. These included:

- the need to integrate biophysical, social and economic aspects at all levels of decision-making within the port development cycle, i.e. policy, planning, design, construction and operation; and
- the use of various environmental assessment and management tools, including environmental management systems (for port operation), EIA (port design) and SEA (port policy and planning).

The CSIR's comments were also presented (in writing and verbally) to the Parliamentary Portfolio Committee on Transport - responsible for reviewing the policy and comments before the final draft was submitted to the Minister and then to Cabinet for approval. This allowed the CSIR to lobby for its comments to be taken seriously and included in the policy.

More than 80% of the CSIR's comments on including sustainability and the use of various tools to achieve this were included in the final White Paper. For example, it now states that "SEA should be used for the proactive integration of biophysical issues with social and economic issues at the policy and planning level" (National Department of Transport, 2002). The NPA also committed to undertaking SEAs for all South Africa's major commercial ports.

SEA Port of Cape Town – South Africa

Background

The Port of Cape Town is one of South Africa's largest commercial ports and plays a critical role in the development of the economy of the Western Cape and South Africa. It is particularly known for exporting deciduous fruit and other frozen products, core components of the Western Cape economy. Other core businesses include container handling, ship repair, fishing and bulk oil activities. Some of the port's secondary business includes hosting local and foreign fishing fleets operating in the South

Atlantic and South Indian Oceans, fuel bunker supply, and providing a logistical base for various countries with bases in Antarctica.

The Port of Cape Town is surrounded by a complex social and built environment and is situated in a sensitive marine environment. The City of Cape Town envelops the port and is experiencing rapid growth. e.g. the Victoria and Alfred Water Front Development, the Cape Town Convention Centre, various hotels and other tourist related developments. The majority of these developments are taking place in close proximity to the port and, in many cases, adjacent to the port boundaries. The city attracts more than 770 000 overseas tourists per year. These are an important component of the economy of both city's and the Western Cape. The marine environment is sensitive in terms of the marine ecosystems and specific threatened marine birds that it supports. The physical marine processes (e.g. sediment dynamics) are sensitive to port and city developments and beach erosion is evident. There has been pressure on the NPA to employ responsible corporate governance and respond to social needs, with the added need to report on its 'triple bottom line' performance.

SEA Process

The NPA commissioned the CSIR and SAKAZA Communications to undertake an SEA for the Port of Cape Town to provide a framework for long-term sustainable port development and operation. The SEA process (Figure C6.8.2) broadly followed that defined in the South African SEA Guidelines (DEAT, 2000) and comprised three distinct phases:

- Phase 1: scoping phase;
- Phase 2: strategic assessment (specialist studies); and
- Phase 3: sustainability framework (Integration).

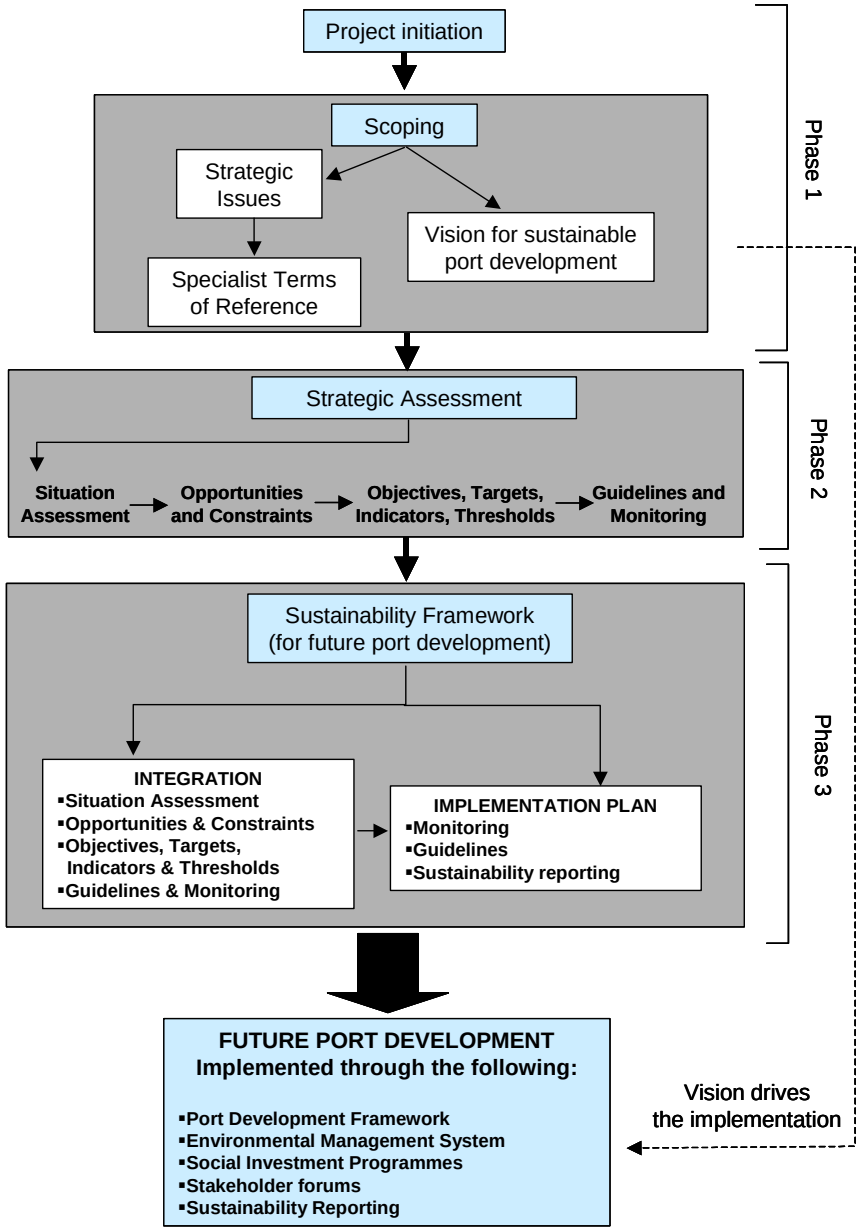
Phase 1: Scoping

A critical part of this phase was the participation of key stakeholders through workshops to:

- define a vision for sustainable port development (Box C6.7.1) to drive the implementation of the Sustainability Framework (see Figure C6.7.1). It was developed through key stakeholder consultation and by reviewing the NPA's vision and mission statements and its environmental policy;
- identify strategic issues for detailed investigation (Box C6.7.2). Such issues were those that, if not addressed by the SEA, would prevent the port from achieving the vision for sustainable port development.

General stakeholders were kept informed of the SEA process through the distribution of information sheets, press notices and access to a website. The port-city issues are important and are highly relevant to sustainable port development (see section on strategic issues: port-city planning, access, sediment dynamics, etc.). So the City of Cape Town Municipality was identified as the most important key stakeholder and was included in a number of additional meetings and workshops. Information obtained from the key stakeholders was analysed and the draft scoping report was made available to both key and general stakeholders for comment. The final scoping report was submitted to the NPA (it is available on http://www.csir.co.za/portofcapetownSEA). It contains draft terms of reference to address the strategic issues.

Figure C6.7.2: SEA Process for the Port of Cape Town



Box C6.7.1: Vision for the sustainable development of the Port of Cape Town

In support of the National Ports Authority's vision and to promote sustainable port development, the Port of Cape Town will:

- have appropriate institutional structures in place to interact with the City of Cape Town and provincial government to facilitate informed and efficient decision-making with regards to port-city developments;
- have well-structured port user and stakeholder forums to ensure effective and transparent communication that leads to informed action to address issues of concern;
- facilitate local, provincial, national and regional economic growth by having and sustaining port systems that facilitate and enable competitiveness in a world-class port system;
- ensure the protection of important ecosystems, habitats and biophysical processes to guarantee the conservation of biodiversity within the port boundaries and surrounds;
- facilitate appropriate socio-economic development within the port boundaries and surrounds that enhances the local social benefits of the port;
- ensure effective use of appropriate tools to integrate biophysical, social and economic aspects into all levels of decision-making, from policy formulation to planning, design, construction and operation (i.e. SEA, EIA, ISO14001 etc); and
- have well-structured biophysical and social monitoring systems that allow for systematic data collection, storage, and analysis, for use in day-to-day management decisions, as well as future strategic port planning processes and annual sustainability reporting.

Box C6.7.2: Strategic issues for detailed investigation during the SEA

1. **Maintenance of marine ecosystem functions and habitats**
   Present and future port operations and future port development will have an impact on the marine environment of Table Bay, thereby constraining the port from achieving its vision of sustainable port development.

2. **Maintenance of shoreline stability**
   The future physical expansion of the port into Table Bay and possible sourcing of fill material from the bay to support such development, may have an impact on the shoreline stability of Table Bay. If this potential impact is significant, i.e. could result in substantial amounts of erosion of the coastline, the future long-term development of the port could be constrained.

3. **Disturbance of marine archaeology**
   The location of shipwrecks within the area of future port expansion (physical expansion, source of fill material, dredge spoil dumpsite) may pose a constraint to future port development. Under the National Heritage Resources Act No. 25 of 1999, shipwrecks older than 50 years are classified as National Heritage Sites and a full archaeological investigation may be required before the site can be disturbed.

4. **Access corridors to the port**
   The restricted access to the port via city, regional and national road and rail routes may prevent the port from achieving its future economic and efficiency goals and therefore pose a constraint to meeting the long-term sustainable vision for the port.

5. **Port-city land use planning issues**
   The development of non port-related activities adjacent to the port may place unrealistic operational constraints on port activities and constrain the port from future physical expansion.

6. **Institutional arrangements**
   The limited formal communication between the higher levels of decision-makers within the city

and port may result in a continued mismatch of the needs and expectations of the port and the city. This could constrain future sustainable port-city development, as a result of delays in decision-making and unnecessary conflict.

7. **Consideration of local, provincial and national policies, economic data and trends for port planning**
   Future port development and infrastructure investment must be informed by regular assessments of local, provincial, national and regional economic growth scenarios of key sectors.

8. **Socio-economic impact of port development and operations**
   The Port of Cape Town plays a vital role in the socio-economic development of the region as well as the City of Cape Town. The socio-economic impact of the port needs to be maximised through proactive policies.

Phase 2: Strategic assessment (specialist studies)

The SEA process was guided by an SEA specialist, while separate subject specialists assessed strategic issues that were identified during the scoping process. Specialist workshops were held to clarify the terms of reference and to facilitate integration between specialist studies. The generic terms of reference for the specialists were:

- discuss the existing state of the environment;
- identify any apparent trends in the environment;
- identify sustainability objectives, targets, thresholds and indicators that will assist with future decision-making and tracking progress towards sustainable development;
- identify opportunities and constraints that the surrounding environment may place on future port development (i.e. impact of environment on development);
- recommend guidelines to overcome constraints and enhance opportunities; and
- recommend a monitoring programme to monitor indicators.

A core task was to identify specific, monitorable indicators to track the port's progress to sustainable development and to assist with decision-making about future port expansion, i.e. by using this information in project specific EIAs.

A number of strategic issues were assessed (for each, existing date and literature were reviewed and expert opinion obtained and, in some cases, additional activities were undertaken – as indicated):

- maintenance of marine ecosystems and habitats;
- marine archaeology;
- shoreline stability (+ use of computer shoreline modelling and expert opinion);
- access to the port (+ use of computer traffic modelling and expert opinion);
- port-city spatial planning;
- socio-economics;
- economics; and
- institutional arrangements (+meetings with key stakeholders and expert opinion).

Each specialist provided a detailed analysis of the existing state of environment concerning 'their' strategic issue, and used this information to identify sustainability objectives and targets. Guidelines to promote sustainable port planning and development were then drafted for use by port planners and environmental managers in future port planning initiatives. Sustainability indicators (together with detailed monitoring programmes) were identified to assist the port with tracking its progress towards achieving the objectives and targets, i.e. sustainable port development. Recommendations were made on reporting against the indicators to track progress towards sustainable port development, i.e. triple bottom line reporting.

Phase 3: Sustainability framework

The SEA specialist was also responsible for compiling the specialist studies and preparing the final output – an integrated report or 'sustainability framework' (available on http://www.csir.co.za/portofcapetownSEA) and for presenting this to the client and the stakeholders in July 2003. This framework includes the following for each strategic issue:

- a brief description of the state of environment;
- opportunities and constraints;
- guidelines for future sustainable port development; and
- a monitoring programme for key sustainability indicators.

Various departments within the Port of Cape Town will be responsible for implementing the actions required to ensure sustainable port development. Some departments within the City of Cape Town will also play a critical role in addressing port-city issue in collaboration with their counterpart port departments. The sustainability framework is also available on http://www.csir.co.za/portofcapetownSEA

A key outcome of the SEA process was the building of port-city institutional linkages which, ultimately, should facilitate cooperative decision-making about port-city issues. The intended outcome of the SEA process is that recommended sustainability objectives, targets and indicators will influence future port planning and environmental management processes by ensuring the integration of social, biophysical and economic aspects early on in the port planning phase.

Some learning points

- It is critically important to obtain commitment to the process and the outcomes of the process right from the start.
- Engaging stakeholders in defining a vision and identifying strategic issues is challenging and requires structured facilitation and sufficient background information.
- Specialists require additional coaching to move away from the impact assessment approach (i.e. impact of development on the environment) to the SEA approach of looking at the opportunities and constraints to future development (i.e. impact of environment on development).
- Identifying appropriate indicators and thresholds requires a sound understanding of the surrounding environment.

Case 6.8: The Sperrgebiet Land Use Plan, Namibia

By Bryony Walmsley

Based on: Walmsley Environmental Consultants (2001): "The Sperrgebiet Land Use Plan." Unpublished report for the Ministry of Environment and Tourism, the Ministry of Lands Resettlement and Rehabilitation and the Ministry of Mines and Energy. Report No. W309, Vols. 1-3. Windhoek, Namibia

Background

The Sperrgebiet is a desert area stretching some 300 km north to south and 100 km inland from the coast. It is the 'Forbidden Territory' comprising an area also known as Diamond Area 1 in the south-west of Namibia (Figure C6.9.1), and it has been closed off to the general public for nearly a century. The area came to prominence in 1908 when the first diamond was found in the desert near Lüderitz, sparking a major diamond rush. Conditions on the diamond fields were chaotic and the German Government (then the colonial power in Namibia) was concerned about illegal mining and the security of the diamonds. In an effort to control these problems, the Sperrgebiet was proclaimed as a prohibited area in 1908. Although sole prospecting and mining rights were granted over the entire 30,000 km^2 area, diamond mining was confined to those areas where diamonds occurred: a narrow strip along the coast and along the banks of the Orange River. However, the exclusive licence was retained so that the intervening 100 km could act as a security buffer. This has meant that the Sperrgebiet has effectively been preserved as a pristine wilderness throughout much of its extent. The irony is that while the area has benefited from *de facto* preservation, the same restrictions on access have meant that very few scientific investigations have been carried out. However, while the detail of its biodiversity may not be known, it is recognised that the Sperrgebiet falls within one of the world's top 25 biodiversity hotspots. In addition, the area is rich in archaeological sites, has a remarkable geology, a fascinating history and a breath-taking landscape and seascape.

In 1994, the exclusive prospecting and mining licences of the non-diamondiferous areas were relinquished. There is considerable interest in the area for a variety of conflicting uses. So the Government of Namibia, in consultation with Namdeb (the mining licence holder) and NGOs, agreed that a well thought-out land use plan (LUP) should be formulated before the area could be opened up. The plan will guide the sustainable development of this fragile area. A Steering Committee was established with representatives from four line Ministries: Environment and Tourism; Lands, Resettlement and Rehabilitation; Mines and Energy; and Fisheries and Marine Resources – a unique collaboration in Namibia. DANCED funded the project.

The long-term objective is to proclaim the Sperrgebiet as a formal conservation area and, ultimately, to incorporate it within a trans-frontier conservation area involving Angola, Namibia and South Africa. But the main development objective of the first phase of the process, the land use plan, was stated to be*"that the long-term sustainable economic and ecological potential is ensured in the Sperrgebiet"*.

In order to achieve this objective, the Steering Committee set out a number of additional goals(MET, 1999):

- to establish an overall management and development vision for the area;
- to use the Land Use Plan (LUP) as a guideline for the sustainable use and development of the area, as other possible land uses emerge;
- to improve the quality and standard of living of the sparse local population around the Sperrgebiet, by guiding the use of resources in a sustainable direction;
- to provide a guide for the decision-makers of Namibia and the Karas and Hardap Regions to plan and implement sustainable developments in the area; and
- to guide existing and potential future operations in the Sperrgebiet … in the formulation of acceptable and appropriate environmental management practices and rehabilitation.

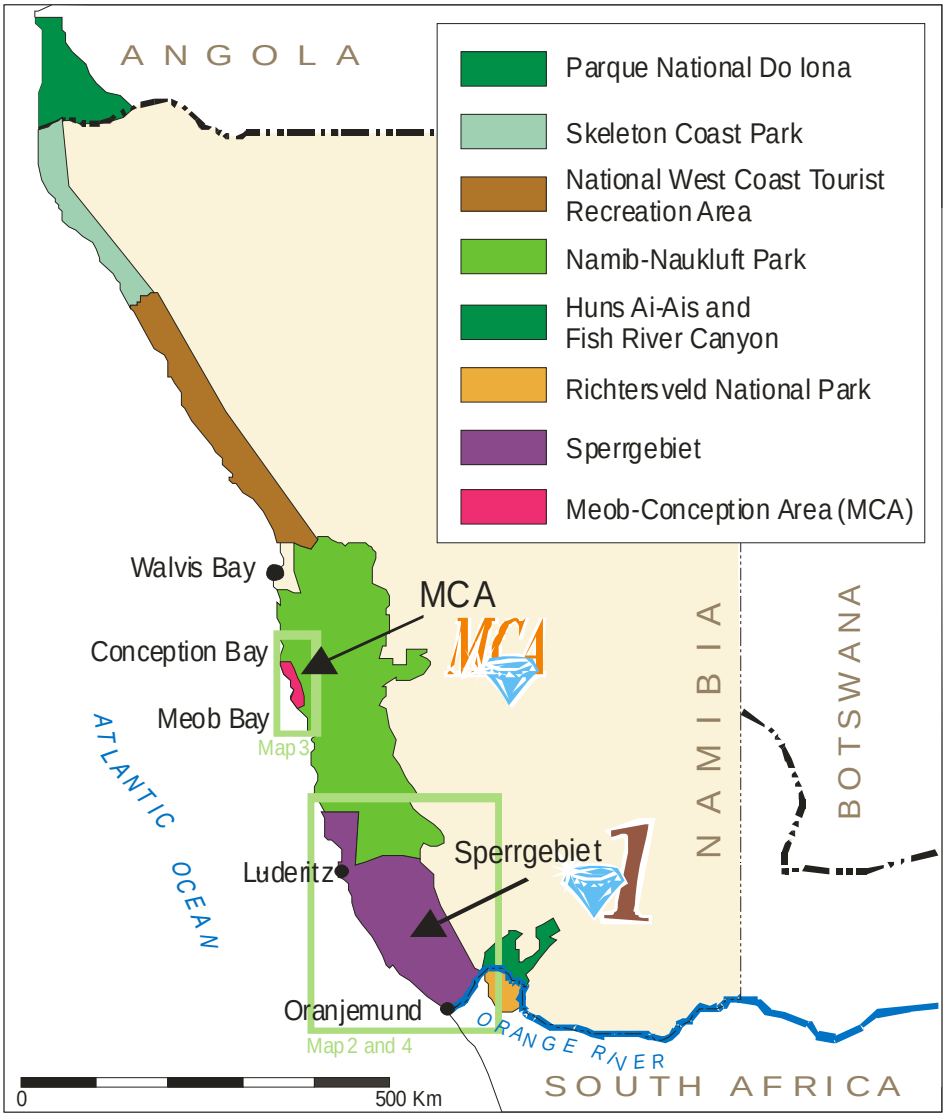


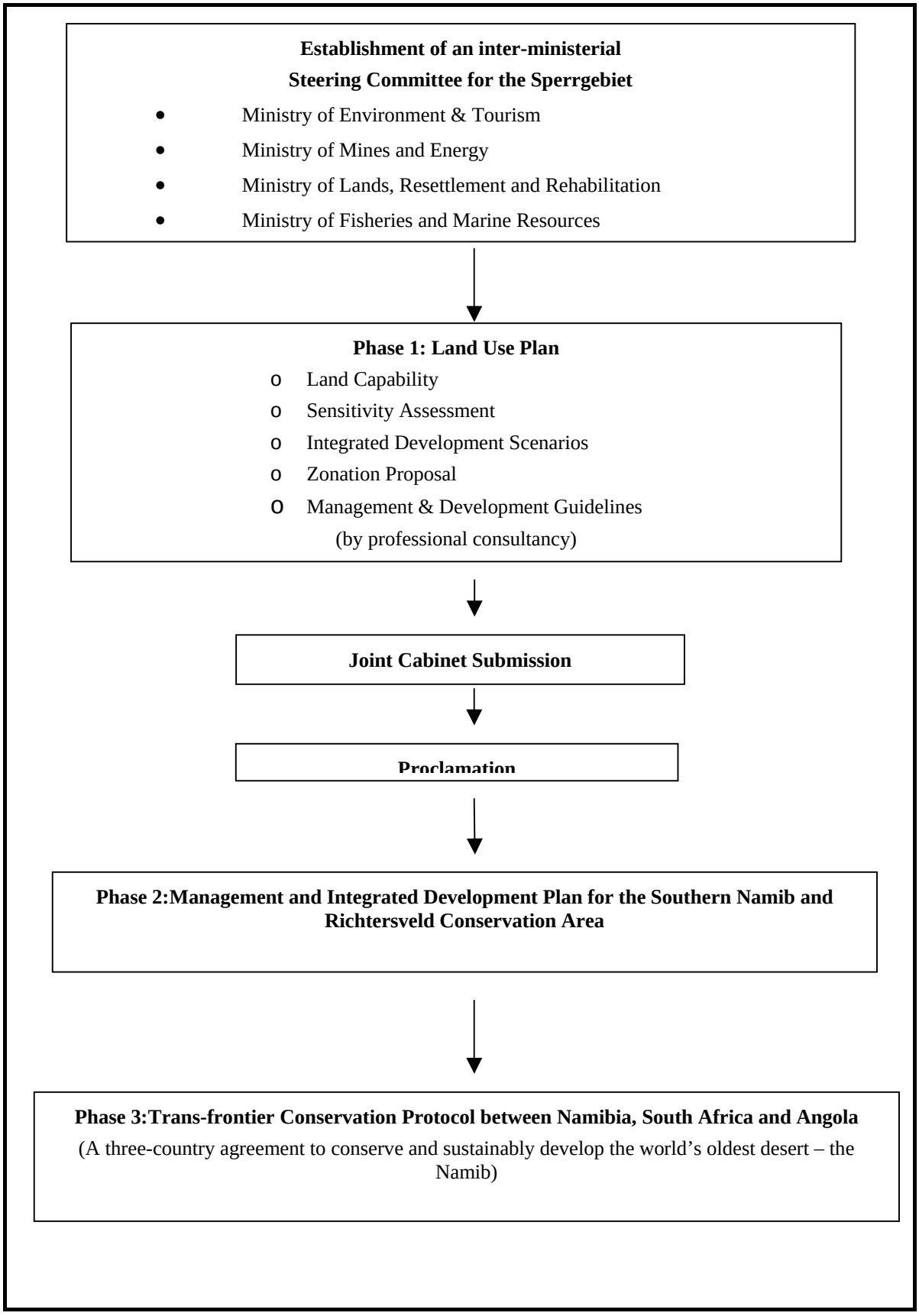
Figure C6.8.1: Sperrgebeit. Location

The land use planning process can be considered a para SEA. It was used to ***develop*** the plan, rather than as the tool to ***assess*** an existing plan. It is also noteworthy that the objectives of the LUP predate, but are compatible with some of the recommendations of the WSSD Plan of Implementation, e.g.

> *38 (b) …develop and implement integrated land management …. plans that are based on sustainable use of natural resources…*

Furthermore, all ten principles of SEA developed by the CSIR in South Africa (see section 6.1.1) and set out in a guideline document (DEAT, 2000) were adopted in the LUP process, making this study a SEA in all but name.

Figure C6.8.2: Process for planning the sustainable development of the Sperrgebiet



Methodology

The study involved the following steps.

1. A particularly contentious point in the study was whether a meaningful land use plan could be drawn up on the basis of so little information. The team undertook a thorough ***literature review*** using as much of the existing information as possible. Then, by extrapolation and through extensive consultation with specialists, gaps were filled as much as possible. The precautionary principle was adopted in developing the zoning plan to ensure that areas of suspected, but not known, biodiversity were afforded the highest level of protection until such time as further research indicates otherwise.

2. A ***field trip*** with conservation officials and a wilderness expert.

3. A ***description of the biophysical and archaeological environments*** and a description of current land use in and adjacent to the Sperrgebiet. Each environmental component was assessed in terms of its opportunities and constraints for various land use activities.

4. Development of a series of ***sensitivity maps*** for various biophysical and archaeological parameters. Social issues were not ignored, but since the only people living in the Sperrgebeit are Namdeb company employees in the private and closed mining village of Oranjemund, there is no social profile for the study area. The sensitivity maps were drawn up based on the available literature and consultation with specialists.

5. An extensive ***public consultation programme.*** This involved four public meetings, the production of information documents and feedback forms, land use questionnaires and a technical workshop with the Steering Committee and selected specialists. The public meetings took the form of workshops after the main presentations. The public were asked to identify those land uses that would be suitable and/or which they would deem to be desirable. The consultation programme enabled a list of possible land use options for the area to be drawn up.

6. ***Evaluation of land use options***. Each land use option was considered in terms of the environmental opportunities and constraints for such a development. For example, the presence of the Orange River would suggest an opportunity for irrigation agriculture. However, such a land use would be constrained by factors such as saline soils, strong winds, sand abrasion, distance to markets etc., and therefore the only crops which could be considered would be high value crops and, even then, such endeavour would be marginal.

7. ***Formulation of a vision***. An assessment of all the inputs and an evaluation of the land use options led to a decision that the entire Sperrgebiet should be declared a Protected Area under the forthcoming Namibian Parks and Wildlife Act. The proposed Act was still in draft form at the time of the study, but it was considered likely that it would adopt the IUCN Guidelines for Protected Areas Management. However, the study team was of the opinion that by simply designating an area as protected, does not ensure its preservation or allow for sustainable utilisation. Thus a zoning plan was developed.

8. ***Development of a zoning plan***. This was based on public input, IUCN wilderness guidelines, IUCN management categories for land use, carrying capacities, available scientific information and, where such information was absent, the precautionary principle was applied. It was recognised that this plan was a "first attempt" and that, as more information becomes available, the zoned areas would be refined. However, it has provided a framework to guide immediate decisions regarding land use in the area. For example, subsequent prospecting operations have complied with the requirements of the land use plan, even though the plan has not yet been ratified by the Namibian Cabinet.

9. *A* ***technical workshop*** was held involving members of the Steering Committee and specialists to discuss and refine the draft zoning plan.

10. A ***preliminary economic analysis*** was conducted of the main land use options for the Sperrgebeit. This indicated the relative income generation from diamond mining, base metal mining and ecotourism, in terms of the local, regional and national economies. The main aim of this exercise was to show that ecotourism by itself would not be financially sustainable due to the low carrying capacities of the Sperrgebiet, and that multiple land uses would have to be considered. The model was based on

the premise that any mining operations in the Sperrgebiet would have to pay some sort of royalty to the national park. This would help to subsidise the development of the national park for the benefit of all Namibians and in the interests of global biodiversity.

11. The land use plan also presented an ***administrative framework.*** This outlined the legal processes required for proclamation of the land, the formation of a Management Advisory Committee (MAC) and definition of its role, ecotourism models, zoning, future access control and integration into the surrounding political and economic structures. For each potential land use, guidelines were prepared outlining what needs to be included in a project-specific EIA and EMP.

Outcomes

The Land Use Plan was finalised in April 2001. It was then presented to the three Ministers involved in the project, as well as to the Cabinet Secretaries. At a Cabinet meeting on 6th April 2004, the proclamation of the Sperrgebiet as a National Park was approved but its name remains to be finalised. The recommendations of the Land Use Plan have been accepted *in toto*

Conclusions

It is somewhat unusual for three line ministries to collaborate as equal partners in compiling a land use plan. Similarly, in Namibia it is rare for such a process to be highly interactive and consultative, ensuring that decisions on the future use of the land are based on a truly shared vision. This collaborative approach came 100 years after the Sperrgebiet was closed to the citizens of Namibia with scant regard for their views, opinions and needs. Lessons appear to have been learned from the mistakes of the past.

This para SEA could allow the value of the Sperrgebiet to be unlocked through an integrated, holistic planning process that properly considers the costs and benefits of various types of land use. The challenge for the government is to reconcile the short-term benefits of mining with the longer term benefits of biodiversity conservation and low-impact tourism on the other. This land use planning process provided a unique opportunity to consider all the options and to propose the Sperrgbeit as a National Park, so that it can be managed in perpetuity for the nation and future generations of Namibians. Now that proclamation has been achieved, the next step will be to conserve the Namib, the world's oldest desert, in a unique, three nation trans-frontier conservation area.

Case 6.9: Sectoral SEA: Generic Environmental Management Programme for Marine Diamond Mining off the West Coast of South Africa.

Prepared by Sue Lane[31] & Robin Carter[32] (1999)

Issue, problem, background (i.e. why the SEA was done?)

Diamonds are mined economically on the continental shelf of the West Coast of South Africa (and adjoining Namibia). Onshore mining began in the early 1900s and, since the 1960s, has extended into the surf zone and shallow sub-tidal areas of the sea. In the mid-1980s, the South African Government recognised the potential to mine commercially viable quantities of diamonds in deeper waters. It established formal concession areas covering 100,000 km^2 of the continental shelf off the West Coast of South Africa .

Most of the concessions have been allocated for prospecting. Current mining effort is limited as techniques for efficient mining outside of safe diving depths have only recently been developed, and prospecting in a large proportion of the concessions has not yet been completed.

Mining law governs the environmental management aspects of marine diamond mining. Environmental assessments and management programmes have to be compiled and implemented for each mining operation. Compliance is monitored by the Department of Minerals and Energy. Mining authorisations and permits are contingent on satisfactory performance. Guidance largely comes from two sources:

- the central themes of the Minerals and Mining Policy for South Africa focus on ensuring the sustainability of the natural environment and management of socio-economic impacts; and
- the White Paper for Sustainable Coastal Development in South Africa which focuses on:
  - recognising the value of the coast;
  - facilitating sustainable coastal development;
  - promoting co-ordinated and integrated coastal management; and
  - introducing a new facilitatory style of management.

The response to these policies by South Africa's marine diamond mining industry has been to adopt environmental responsibility into their operational protocols and to see that the required environmental standards are met. However, they realised that there is commonality in the environmental problems they face and in the mitigation and environmental management actions required. In addition, there were no standardised/ prescribed compliance monitoring standards or management methodologies.

So, a consortium of members of the Marine Diamond Mines Association commissioned a generic environmental management programme (GEMP) for their operations in South African waters. This approach was justified by three facts:

- broadly similar mining technologies and processes are employed;
- physical disturbances between mines differ mainly in scale and not in character; and
- the socio-economic aspects of potential conflicts with other marine and coastal resource users are common across the individual mines.

The challenge was to develop a uniform approach to environmental assessment to overcome duplication of effort and expense and to provide a standardised monitoring programme that is both pragmatic and scientifically valuable. This was to contribute to the sustainable use of living resources and development of the west coast region.

The GEMP was to address all of the activities encompassed in current marine diamond mining practices, as well as those related to expected developments in technology over the ensuing three years. It was to include all the proclaimed marine diamond prospecting concessions on the South African west

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coast. The concessions extend from the high water mark through the surf zone to the 500m depth contour.

Who commissioned / initiated the assessment?

Nine marine diamond-mining companies, members of the South African private sector's Marine Diamond Mines Association (MDMA), initiated and commissioned the generic assessment and management programme.

Who was involved / participated?

Private enterprise, research specialists, NGOs and government agencies from national to local levels with jurisdiction over activities in the coastal and marine environment were consulted iteratively throughout the compilation of the GEMP. Sectors included mining (diamonds, oil and gas), fishing, shipping, recreation, nature conservation, farming and archaeology. The neighbouring Namibian diamond, fishing and environmental conservation sectors were also consulted.

Approach / methods (how was the assessment done?)

The consultants employed to compile the GEMP were experienced in undertaking EAs, EMPs and related studies for marine diamond mining and oil and gas exploration/exploitation projects in Namibia and South Africa. They drew on international experience in marine placer deposit mining and local and international dredging projects. Environmental objectives were drawn from South Africa's policies for mining and for coastal development.

The process comprised:

- consultation with the mining industry to identify all activities associated with marine diamond mining in different areas of the sea;
- identification of threats and opportunities caused by mining to all marine users and administrators, and coastal communities, by consulting them;
- description of the bio-physical and socio-economic baseline environment, and trends in components where relevant;
- assessment of cumulative impacts of disturbances caused by mining and estimation of limits (rate, extent and nature) of disturbance the system could potentially withstand; and
- preparation of guidelines for management of mining activities within the different marine zones extending from the outer edge of the continental shelf through mid and shallow water zones, surf and inter-tidal zone, and to the immediately adjoining land.

The GEMP is currently being tested and refined through use by the industry in compiling project-specific EAs and EMPs, and is being adjusted in response to the needs of the permitting authorities. Further revisions will be needed owing to advances in mining technology that could result in significantly different impacts on the natural system. So the GEMP should be modified to be consistent with the theme of constant improvement through application.

Outcomes (impacts of the SEA, decisions influenced)

The GEMP process has helped to inform decision-making by establishing a framework through which mining (and ideally other marine activities) can be managed at strategic and at project specific levels. The framework can be used to promote sustainable development on the west coast of South Africa (and potentially in southern Namibia too). The GEMP has demonstrated that an agreed and standardised approach is useful to mining companies, government authorities and other interested parties alike.

Over and above cost savings to the mining companies, government benefits by having a uniform set of environmental management standards or guidelines. Monitoring requirements are clearly given. Required management actions target clearly defined objectives, methods and reporting procedures, and allow auditing. Applicant miners are able to make adequate financial provisions for environmental management, and government is able to put the required infrastructure in place to audit the environmental management programmes.

The GEMP has enabled mining companies to compile project-specific management programmes that consider the bigger picture. These programmes promote environmentally responsible operations as they adequately address the concerns of co-users of the area, neighbours and other interest groups, and enable self-regulation. They have also facilitated auditing of company performance by government agencies, and allowed miners and regulatory authorities to take informed decisions about adjusting strategies or targets to continually improve industry-wide environmental performance.

More specifically the GEMP:

- informs the industry about policy and legal requirements of all relevant government sectors, and gives an explanation of how mining activities do and could affect the environment;
- provides management objectives, appropriate actions and their legal and/or scientific justification, for industry to comply with;
- establishes forums for resolution of conflict between industries and other users;
- promotes joint management of resources, by government and industry, and promotes "partnerships" between larger companies and small scale mining;
- Guides mining to contribute to knowledge about ecosystem functioning. This is paid for directly by mining and the results are widely applicable to marine resource management by government and others (e.g. on geology, climate, marine life, shipping observations etc.); and
- encourages the South African and Namibian governments to establish joint policies and management strategies, with standardised monitoring and reporting procedures particularly to determine cumulative effects and thresholds of disturbance, and to share skills and information.