# Topic 15 – Future directions

## Objective

To make participants aware of:

- emerging trends in EIA and SEA and where they appear to be leading;
- the particular importance of developing an integrative approach toward sustainability appraisal; and
- the relationship of EIA and SEA with other impact assessment and appraisal tools in this regard.

## Relevance

The approach of this manual has been to take the participants step by step through the requirements for effective project EIA, and to introduce the role and scope of SEA. Project EIA and SEA, however, are part of a much larger kit of impact assessment and environmental management tools. In the future, their application is likely to become part of more integrative approaches to sustainability appraisal.

## Timing

One hour

***Important note to trainers***

*You should design your presentation with the needs and background of participants in mind, and concentrate on those sections most relevant to your audience. The session presentation timings are indicative only.*

*Time taken for the training activities can vary enormously depending on the depth of treatment, the existing skills and knowledge of participants and the size of the group.*

## ☑ Information checklist

Obtain or develop the following, as appropriate:

- ❑ examples of recent and emerging trends in the development of EIA locally;
- ❑ examples of local use of other forms of impact assessment, economic and social appraisal and environmental management systems;
- ❑ copies of sustainable development policies, plans and strategies that have been prepared or are used locally;
- ❑ contact names and telephone numbers of people, agencies, organisations and environmental information/data resource centres able to provide assistance in relation to these trends, policies and tools; and
- ❑ other resources that may be available such as videos, journal articles, computer programmes, lists of speakers, case studies etc.

## Session outline

**Briefly recall the key characteristics of EIA and SEA as presented in this manual. Introduce the challenges that still need to be met, placing them in a forward-looking context.**


1

The training modules in this manual have presented EIA as a tried and tested process, which contributes to sound planning and management of development proposals. EIA is part of a family of impact assessment tools that are widely agreed to offer a solid foundation on which to undertake an integrated sustainability appraisal. Specifically, EIA provides an entry point for integration with economic and social appraisal tools. Firstly, EIA already includes consideration of social, health and other factors and, secondly, it is enshrined in legislation in so many countries. Other tools do not have this status, nor are any likely to assume it in the immediate future.

Elsewhere in this Manual, EIA is identified as a *foundation tool* for sustainable development (see Section A – *The manual in perspective*). It provides:

- a sound basis for further legal and institutional development;
- a stepping stone to other more integrative and strategic modes of analysis;
- an established means to inform decision-making and promote environmentally sound development; and
- a vehicle by which environmental and social values are introduced and instituted in the policy mainstream.


2

The introduction of SEA has strengthened and extended the value of EIA as a foundation tool for sustainable development (see Topic 14 – *Strategic Environmental Assessment*). In particular, SEA helps to overcome the limitations of project EIA as a 'stand alone' approach, applied relatively late in the decision-making cycle. SEA is applied to policy, plan and programme proposals, when major alternatives are open and systematic consideration can be given to their environmental effects and implications. This process also corresponds to options appraisal of development proposals to find the best practicable outcome having regard to all the potential impacts.


3

In practice, however, EIA and SEA fall short of functioning as true sustainability instruments. Further changes are needed if they are to realise their potential in this regard. SEA is not yet in widespread use and EIA needs to be strengthened at basic levels in many developing countries. Elsewhere, EIA and SEA are wanting in their consideration of cumulative effects, biodiversity loss and large-scale changes to natural systems (see Topic 1 – *Introduction and overview of EIA*). As such, they currently can provide only limited assurance that development proposals are environmentally sustainable.


4

Looking ahead, this challenge is likely to become more pressing and urgent as

a result of globalisation, trade liberalisation, deregulation and other market forces. In turn, the environmental footprint of economic activity can be expected to become ever larger, more complex and interconnected spatially. There are evident limitations on EIA as a systematic process to predict and mitigate the adverse environmental impacts of proposed actions. In the future, assessment will need to be more adaptive as well as integrative, for example, by adopting a precautionary approach based on best estimates of safe development thresholds and backed by monitoring, auditing and other checks.

**Introduce a framework and process to discuss future directions in EIA and SEA. Ask participants to relate this to local circumstances and needs.**


5

Future directions for EIA and SEA can be discussed from a number of perspectives. These include:

- What ideally should happen?
- What realistically is likely to happen?
- What probably could happen if policy intervention and capacity building were better targeted?

Each of these perspectives can be used by trainers as building blocks or stepping stones to develop views on future directions for EIA and SEA. First, the sustainability agenda can provide an appropriate context or reference point to identify needed changes to EIA and SEA. Second, consideration can be given to the aims and trends that drive development activities and underlie environmental and social impacts. Third, use can be made of local information on the policy and institutional framework to develop conclusions on what could be possible in the way of policy intervention and capacity building to improve EIA and SEA.

Ten years after Rio, the challenge of sustainable development has not changed. Without better care of the environment, the prospects for development will be undermined; and development is critical in a world where more than three-fifths of the population live at or near subsistence level. A review of progress that has been made since Rio to address these issues will take place in Johannesburg in September 2002. Early indications are that the Summit will focus primarily on poverty, development and the environment, emphasising the aims and concerns of developing countries (see Box 1)

Needed directions for EIA in a particular region or country are best identified through the lens of the development agenda and its critical impacts. In some developing regions, for example, environmental deterioration threatens the ability of nations to meet the basic needs of their populations for food, water and shelter. Where environmental deterioration and poverty are closely linked, EIA will need to focus on this relationship much more in the future. Usually, however, the poorest countries have the

least capacity to use EIA as a tool to help achieve poverty reduction, improve health and promote sustainable livelihoods.

These realities are being given increasing attention by multilateral financial institutions and donor countries, and their environmental and poverty reduction strategies can provide a useful framework for consideration of future directions for EIA. For example, the World Bank's Africa Region Environmental Strategy includes broad priorities for action and sub-regional objectives (see Box 2). Similar strategies are in place for other regions. They indicate future directions for policy intervention and capacity building, which can be checked against information on local EIA needs (as identified from the exercise in Section B of the manual).

**Box 1: Major aims of development**

Some of the major aims of development are listed below. Check to see which ones are important regionally or locally:

- *reducing poverty* -- 3 billion people live on less than US$2 per day
- *doubling available food supply* -- required to meet projected increase in world population, but without excessive use of chemicals, conversion of natural habitat or degradation of marginal lands
- *supplying energy services* -- 2 billion people without electricity, cooking with traditional fuels associated with high incidence of health problems
- *providing access to water to meet basic needs* -- 1 billion people live without clean water, 2 billion without sanitation
- *improving urban environments* -- the urban poor lack basic services and infrastructure)

*Source: UNEP, NASA and World Bank (1998)*

**Box 2: The World Bank's African Region Environmental Strategy**

The Strategy aims to help borrowing countries achieve poverty reduction through better environmental management. Major objectives are to:

- ensure sustainable livelihoods by protecting productive resources and ecosystems
- improve health by tackling environmental determinants of endemic disease
- reduce vulnerability to natural disasters and extreme climatic events

A people-centered, ecosystem approach to development is taken. The Strategy identifies:

- three broad priorities for action – quality of life, quality of growth and quality of the global commons

- specific priorities for six sub-regions and a number of key sectors, such as agriculture and rural development

Means of implementing the Strategy include:

- improving the application of environmental assessment
- strengthening land use and sectoral environmental planning
- providing the essential institutional and technical tools for environmental management

*Source: World Bank (2001)*

**Describe some of the trends and imperatives for sustainable development that are shaping future directions for EIA and SEA, internationally, regionally and locally. Explain why there is a shift toward more integrative approaches and greater use of EIA and SEA as sustainability tools.**


6

The UNEP report on *Protecting Our Planet; Securing Our Future* describes the linkages between environment and development issues and highlights their policy and scientific implications. It identifies three broad themes that bear upon future directions for EIA and SEA as sustainability tools:

- Impacts – what are the environmental and social changes that matter and that need to be taken into account?
- Drivers – what are the underlying trends that need to be understood and factored into analysis and mitigation of adverse impacts?
- Response – what changes and improvements are necessary to EIA and SEA process and practice if they are to function more effectively as sustainability tools, having regard to any constraints?

The Report confirms:

- activities to meet human needs have global environmental consequences that are cumulatively and qualitatively different from what has gone before;
- population growth, increasing consumption and use of technology are the underlying forces responsible for environmental degradation; and
- assessing these linkages systematically and holistically offers the best opportunity to identify cost-effective policy interventions to promote sustainable development.

Despite the agreements reached at Rio and afterwards, human activities continue to have an unparalleled impact on the global environment (see Box 3). The Earth is approaching critical thresholds beyond which natural systems may not be able to accommodate all of the pressures imposed on them without their functions becoming significantly impaired. Many of the issues are interdependent and reinforcing; for example, climate change can lead to loss of biodiversity and invasion of exotic species, pests and disease vectors. Other than for stratospheric ozone loss, major steps toward slowing the trend

lines of global environmental deterioration have yet to be taken.

New approaches to policy making and analysis must be found to manage the range and magnitude of environmental impacts and simultaneously achieve the major aims of development proposals. This was one of the main conclusions reached by the World Commission on Dams, which reported that often an unacceptable social and environmental price has been paid to secure the economic benefits of major hydro projects. It called for a comprehensive approach to assessing the social, environmental and economic dimensions of development options. The Commission also recommended paying greater attention to these aspects during project implementation and operation.

In this context, EIA and SEA are important because they are being extended in these directions already. Further innovation can accelerate the trends:


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- 'upstream' toward sustainability appraisal – by integrating EIA and SEA with SIA and benefit-cost analysis and other economic and social appraisal tools; and
- 'downstream' toward environmental management – by combining environmental assessment with environmental accounting and environmental auditing.

**Box 3: Global and large scale environmental impacts**

Eight major global environmental issues are listed below. Check to see which ones are important regionally or locally:

- climate change -- the Earth's average temperature projected to increase by 1.4 to 5.8 degrees C during next 100 years
- loss of biological diversity -- current rates of species extinction estimated to be 50 to 100 times the expected natural rate
- stratospheric ozone depletion -- reduction ranges from 60% over Antarctica (in Spring) to 3-5% in mid latitudes (year round average)
- freshwater supply and quality -- one-third of the world's population live in water stress areas, expected to rise to two-thirds by 2025
- land degradation and desertification -- one-quarter of the Earth's surface estimated to be affected, mainly arid rangelands but also irrigated and rain-fed agricultural lands
- deforestation and unsustainable harvesting -- globally 12 to 15 million hectares lost each year as a result of conversion, pollution and timber cutting
- marine degradation and over-fishing -- coastal areas and oceans threatened by nutrient overloading and trace contaminants, many major fisheries are classified as over-exploited
- persistent organic pollutants -- chemicals that bioaccumulate in fatty tissues at different levels in the food chain, health risks associated with human exposure to certain substances, worldwide build up as a result of their long range transportation

*Source: UNEP, NASA and World Bank (1998)*

**Describe the basic aspects and issues that are encountered in moving EIA 'upstream' toward integrated impact assessment and sustainability appraisal. Indicate whether and how these are relevant or applicable to the local situation, using the results of the Training Needs Analysis where appropriate.**

**8 & 9**

The shift upstream toward more integrated forms of impact assessment extends the type of effects and scope of linkages to be considered. An integrated assessment considers the economic, environmental and social consequences of proposed actions and options, including measures to mitigate adverse effects and to enhance positive effects. Decision-makers also need to consider the consequences of their choices within a broader framework of values and criteria than before. The World Commission on Dams states that the decision-making process itself must be fundamentally altered to reconcile competing aims and considerations (see Box 4).

An integrated approach to impact assessment can be equated with sustainability appraisal, especially where it is based upon objectives, principles, criteria and indicators of sustainable development. These aspects can be found in Agenda 21, other Rio agreements and national strategies for sustainable development, and used to identify the relevant economic, environmental and social impacts that need to be taken into account. When carrying out an integrated assessment of development proposals, these characteristics are referred to as the triple `bottom lines' of economic feasibility, environmental capacity and social equity. Their definition helps to clarify the real costs and trade-offs that are at stake in a particular situation.

This process facilitates *balanced* decision-making, helping to ensure that economic development is not achieved at the expense of the environment or people. An integrated assessment incorporates multiple goals and considerations. It is both the only route to make real progress toward more sustainable development and one of the biggest challenges to getting there. Aiming to meet several goals at the same time usually prevents any one being maximised and vice versa. For example, an irrigation scheme that is projected to maximise agricultural output may have significant environmental and social impacts, and avoiding and minimising these effects may significantly reduce projected output.

In principle, integrated assessment calls for economic, environmental and social considerations to be placed on an equivalent footing and considered at the same time in the process of development decision-making. The key characteristics of this approach are that:

- all impacts and costs associated with major development proposals and alternatives must be fully and systematically analysed in order to optimise the choice to be made; and
- all proposals that are approved must meet economic, environmental and social objectives at some threshold or minimum level in order to be consistent with the notion of sustainable development.

Recently, UNEP has promoted integrated assessment of trade-related policies and liberalisation agreements. When conducting trade negotiations, few governments give sufficient attention to their wide-ranging effects on the economy, the environment and society or measures to address and regulate them. A UNEP reference manual has been developed for this purpose. It should be consulted, together with the companion volume to this manual (*Environmental Impact Assessment and Strategic Environmental Assessment: Towards an Integrated Approach*), when presenting this module. The approach to integrated assessment recommended by the reference manual is summarised in Annex 1.

Some EIAs correspond already to integrated assessments by including consideration of social, health and certain types of economic impacts (for information on methods and tools used see Topic 6 – *Impact analysis*). However, EIA and SEA have yet to systematically test development proposals against environmental 'bottom lines' or explicit sustainability criteria. In this context, EIA and SEA are concerned with maintaining the capacity and integrity of natural systems rather than minimising impacts.

A framework for this purpose can be introduced by:

- identifying sustainability objectives and criteria as expressed in government policy;
- applying the precautionary principle based on the mitigation hierarchy of avoid, mitigate and compensate (see Topic 7 – *Mitigation and impact management*); and
- use of the polluter pays principle to require `in-kind' replacement or compensation for residual impacts that cannot be mitigated or avoided.

**Box 4: New approaches to development decision-making as proposed by the World Commission on Dams**

The World Commission on Dams considers that the way development decisions are made must be fundamentally altered if the environmental, economic and social impacts of major proposals are to be reconciled. It recommends this is achieved by introducing new perspectives and criteria, establishing processes that build consensus around the options selected and basing decisions on five core values or tests. These values are equity, efficiency, participatory decision-making, sustainability, and accountability.

Applying these core values to decision-making requires an open, transparent and inclusive process. This involves pursuing a negotiated outcome. A three-step approach is followed to recognise rights, assess risks and reconcile competing needs and entitlements.

- First, clarify the claims and entitlements that may be affected by a development proposal and alternatives. This is a pre-condition for the identification of legitimate stakeholders who are entitled to a formal role in the consultative process, and in negotiating specific agreements on benefit sharing and compensation for loss.
- Second, identify and assess the major risks and impacts on people's lives and livelihoods. Their stake in the development decision-making process then

should be commensurate with their exposure to risk, extending the notion of risk to those affected involuntarily by a proposal and to the environment as a public good.

- Third, engage risk bearers and risk proponents in negotiating an equitable outcome to the issues at stake. Prior recognition of rights and assessment of risks lays the ground for informed and legitimate decision-making on major development proposals that have far reaching impacts.

*Source: World Commission on Dams (2001)*

**Describe the basic aspects and issues that are encountered in moving EIA 'downstream' toward integrated environmental management. Indicate whether and how these are relevant or applicable to the local situation, using the results of the Training Needs Analysis where appropriate.**

**10&11**

The shift 'downstream' toward environmental management extends the range of impacts to be considered. Attention is given to all impacts on the environment, not only those associated with proposed developments. Existing economic activities, from subsistence agriculture to industrial manufacturing, are far more important than new projects in contributing to resource depletion and ecological deterioration. If they are to be assessed and managed systematically, the linkage and interaction among environmental issues and impacts needs to be placed in larger scale, longer term frameworks than are possible in EIA and SEA of proposed actions.

Particular attention is given to the environmental management of business and industrial facilities, products and services. In recent years, enterprises in many parts of the world have established their own environmental management systems (EMS) in accordance with the principles and specification laid down by ISO 14000 series. Under this framework, an EMS describes the procedures, responsibilities, tools and practices that an organization should follow to manage its environmental impacts (see Box 5). ISO 14001 is widely seen as providing an effective approach to environmental management for business and industry.

However, the large majority of private sector firms are not signed up to ISO 14001, and there is little take up by small and medium enterprises. In addition, many other economic activities are not subject to any form of environmental management and control. The *UNEP Global Environmental Outlook (GEO-2000)* cites the lack of appropriate policy frameworks and tools for integrated environmental management (IEM) as one of the reasons why 'full scale emergencies now exist on a number of issues'.

Three major issues are identified as standing in the way of achieving IEM:

- knowledge gaps – GEO-2000 shows that a lack of comprehensive assessment and monitoring still impedes environmental policy making and regulation;
- failure to address root causes – policy instruments still focus on specific impacts, rather than considering the cumulative effects of driving trends

in population, consumption and technology; and

- need for better cooperation – the importance of engaging all stakeholders in environmental management is emphasised throughout both GEO-2000 and the report of the World Commission on Dams (Box 4 above).

When combined, a number of established policy tools provide the building blocks for a comprehensive, effects-based system of environmental management:

- *environmental accounting* – to record changes to resource stocks in national income accounts so that the true cost of depletion and pollution is shown;
- *environmental assessment* – to analyse the environmental impacts of major development proposals and mitigate their adverse effects; and
- *environmental auditing* – to verify that existing business and industry practices comply with environmental regulations and standards.

Environmental accounting provides a means of valuation of the real wealth of a country. It is a macro-policy tool that indicates broad, sustainability related trends in resource depletion and environmental deterioration. Non-sustainable resource use is treated as depreciation, and shown as a deduction from national income or gross domestic product. The net adjustment that is made should reflect the rate at which, say, timber cut or fish harvested exceeds natural regeneration. Although open to debate, this accounting device highlights over-exploitation of natural resources, showing that many countries are poorer than is suggested by the conventional economic accounts.

Environmental audits are used for a number of different purposes. They can be carried out as part of the environmental management plan for projects subject to EIA, for example to check that impacts are as predicted and mitigation measures are working as intended (see Topic 11 – *Implementation and follow up*). Other forms of environmental audit are widespread in industry and business, where they are used to examine environmental risks and liabilities and verify that a company's environmental practice and performance meet the necessary standards.

**Box 5: EMS components and tools**

The ISO 14000 series comprises an internationally recognised framework for business and industry to manage the environmental impact of their activities, products and services. Environmental management systems (EMS) that are registered to ISO 14001 provide a coherent regime for organisations to ensure their operations comply with applicable laws, regulations and objectives. A common approach of plan, do, check and act is followed to control and reduce environmental impacts, both internally, within a business, and externally, throughout the supply chain of larger companies.

ISO 14000 is still under development. A number of standards have been published; others are being finalised. The series can be grouped into several components including:

- *Environmental management systems* – ISO 14001 specifies the requirements against which an EMS may achieve independent, third party certification.

Other standards provide guidance on EMS principles and their application (ISO 14004), define terms (ISO 14050) and identify criteria for performance review (ISO 14031).

- *Environmental auditing* – There are three standards relating to broad guidance (ISO 14010), procedures for auditing an EMS (ISO 14011) and qualification criteria for practitioners (ISO 14012).
- *Eco-labelling* – This term describes the information for purchasers and consumers that is placed on products to describe their environmental impact. Standards cover principles of eco-labelling (ISO 14020), codes of practice for green claims (ISO 14021) and labelling procedures (ISO 14024).
- *Life cycle assessment* – LCA is a tool for systematically analysing the impact of a product or service across all stages of its development from cradle to grave. The principles and phases of LCA are set out in ISO 14040.

**Conclude by considering the steps and measures that are needed to strengthen EIA and SEA locally. Ask participants how these might lead towards the integrated approaches discussed above.**


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By itself, or even with SEA, EIA is insufficient to address the scale and scope of environmental problems caused by accelerated economic growth. There is now agreement on the need to adopt more integrated approaches, encompassing a range of tools, to deal with the multiple causes of environmental degradation. Getting there will take time, and progress can be expected to vary from country to country.

In the interim, incremental steps and measures to improve EIA and SEA practice can help to get there from here. The specific requirements and opportunities that apply locally can be established via the process introduced earlier and using the results of the Training Needs Analysis. Some pointers are given below to general directions, which are drawn from international experience.

Immediate improvements to EIA (and SEA) practice can be made through:

- better information on EIA practice, e.g. lessons of case experience and updates on developments in law and process;
- better training in EIA, preferably as part of an overall strategy of capacity building and/or continuing professional development; and
- better guidance on EIA best practice, which demonstrates rather than just states how principles and procedures can be applied to resolve problems and inform decision-making.

Within the near term, EIA processes could be improved by:

- strengthening procedural checks and balances for quality assurance and control, paying attention to acknowledged weak links (e.g. scoping and follow-up);
- emphasising monitoring and other tools for project implementation and operation;

- encouraging the extension and wider take up of SEA, and adapting it to the requirements of developing countries;
- promoting learning by doing, especially when EIA and SEA are applied to new areas or issues; and
- reinforcing core competencies and encouraging new skills (through better information, training and guidance as above).

Over the short to medium term, EIA and SEA could be sharpened as mechanisms for sustainability assurance by:

- coordinating these processes upstream with economic and social appraisal and downstream with EMS tools;
- developing operational frameworks of environmental sustainability against which development proposals can be tested for consistency;
- developing operational frameworks of environmental, economic and social sustainability against which integrated or full cost impact assessment of development proposals can be conducted; and
- applying them to new areas of emphasis, particularly sectors that have global and cross-cutting impacts such as trade, financial investment and technology transfer.

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**Complete this segment by drawing the group's attention to *Environmental Impact Assessment and Strategic Environmental Assessment: Towards an Integrated Approach* which has been produced as a supporting volume for this Manual. Also encourage further networking among those involved in EIA and the use of electronic networks such as those listed in the Contacts section at the front of this manual to establish contacts, access new case studies and to download other information and training materials. Give directions for accessing these networks (see verso of the manual title page for details).**

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## Annex 1: UNEP framework for integrated assessment as applied to trade policy.

**Why undertake an integrated assessment of trade proposals?**

This approach can serve a number of interrelated purposes:

- clarifying the linkages between environment, trade and development;
- informing decision-makers on key issues that need consideration in trade negotiations;
- designing options and policy packages that integrate the environment into proposed agreements and actions; and
- increasing the transparency of the policy making process.

**What are the main aims and benefits of an integrated assessment?**

The main aim of an integrated assessment is to facilitate informed and balanced decision-making in support of sustainable development. This process points toward appropriate policy responses to mitigate any harmful impacts of proposed actions on the environment or society and to promote positive effects. For example, trade agreements can be modified prior to or after implementation, or 'flanking' policies can be adopted that simultaneously promote economic, environmental and social goals. These policies can be applied at national, regional or global levels.

**How to carry out an integrated assessment?**

A five-step approach to the conduct of an integrated assessment is outlined below. This framework identifies a menu of options that can be employed, depending on a particular situation, level of resources, and set of priorities.

*Step 1: Identifying purpose and scope.* It is important to establish whether an integrated assessment will cover all or some combination of the purposes listed above. Scoping can help to establish the main issues, the boundaries of potential environmental and social impacts and the relationship to other policy areas (see Topic 6 – *Scoping*). For example, a review of trade issues might include the relationship to exchange and interest rates, private investment, income distribution and land tenure arrangements.

*Step 2: Designing an integrated assessment.* Key issues to be decided at the beginning of the process include: timing of assessment, stakeholder and public participation, data availability and sources, methodology and means of consultation, and identification of indicators that are relevant to sustainable development. These considerations will be driven by the role and purpose of an integrated assessment (Step 1). For example, in the case of trade negotiations, there will be important differences between ex-ante (prospective) and ex-post (retrospective) review of the environmental and social impacts.

*Step 3: Use of methods and techniques.* A large number of methods and techniques are available to carry out an integrated assessment. Many of these are well established and used already in EIA, SIA and economic appraisal. Specific attention needs to be given to valuing environmental and social impacts that are hard to cost, and to means of weighting when making trade-offs. Use of appropriate methods for this purpose is described in Topic 6 – *Impact analysis* and Topic 13 – *Social Impact Assessment.*

*Step 4: Policy response.* The transition from analysis to policy is a critical step, which typically is taken with little or no practical guidance or recognition of how key stakeholders influence the process of decision-making. With regard to trade, there is a broad range of possible policy responses. For present purposes, this can be divided into two general categories: modifying and extending a trade agreement or policy by inclusion of environmental and social safeguards; and instituting flanking policies to enhance the positive effects and mitigate adverse impacts.

*Step 5: Monitoring and evaluation.* Following the introduction of flanking policies, it is prudent to monitor and evaluate their effectiveness in addressing environmental and social impacts. An impact tracking system can be based on a set of indicators identified in Step 2. This system will require certain resources and institutional arrangements to be in place in order to systematically oversee monitoring and ensure unforeseen impacts are addressed.

*Source: UNEP (2001)*

## Reference list

The following references have been quoted directly, adapted or used as a primary source for major parts of this topic.

Sadler B (1996) *Environmental Assessment in a Changing World: Evaluation Practice to Improve Performance*. (Final Report of the International Study of the Effectiveness of Environmental Assessment). Canadian Environmental Assessment Agency and International Association for Impact Assessment, Ottawa.

Sadler B (1999) A Framework for Environmental Sustainability Assessment and Assurance. In Petts J (ed.) *Handbook of Environmental Impact Assessment* (Vol. 1, pp.12-32). Blackwell Science Ltd, London, UK.

UNEP (1999) *Global Environment Outlook – GEO 2000*. Earthscan, London.

UNEP (2001) *Reference Manual for the Integrated Assessment of Trade Related Policies*. UNEP, Geneva. (www.unep.ch/etp/acts/manpols/rmia.htm)

UNEP, NASA and World Bank (1998). *Improving Our Planet, Securing Our Future*. UNEP, Nairobi, Kenya (www.unep.org)

World Bank (2001) *Environment Matters*. Environment Department, World Bank, Washington, D.C. (www.worldbank.org)

World Commission on Dams (2000) *Dams and Development: A New Framework for Decision-Making*. Earthscan, London. (www. unep-dams.org)

## Further reading

*Environmental Assessment Yearbook 2001*. Institute of Environmental Management and Assessment and EIA Centre, University of Manchester, Lincoln, UK.

Kirkpatrick C and Lee N (eds.) *Sustainable Development and Integrated Appraisal in a Developing World*. Edward Elgar, Cheltenham, UK.

# Training activities

*Training activities will be more instructive if they are framed around a local proposal. Consider inviting prospective course participants to make a presentation if they have expertise in this area of EIA.*

## Discussion themes

15–1 What trends in society, environment and the economy bear on the future directions and challenges for EIA?

15-2 What factors do you feel will have the most influence in the development of EIA locally over the next five to ten years?

15–3 What are the main impediments to changing the EIA system locally? How could these impediments be overcome? What role might capacity building play?

15–4 Identify some of the implications of sustainable development for the future directions of EIA process and practice locally.

15–5 Consider the feasibility of moving EIA upstream toward sustainability appraisal and downstream to integrated environmental management.

## Speaker themes

15–1 Invite a speaker to outline the local, regional and global challenges that EIA will be expected to meet in the next ten years.

## Group Activity 15–1: Future directions

If required use the framework and process for discussing future directions to identify practical steps that could be taken toward establishing the frameworks for integrated assessment.


1

**Using EIA to move towards sustainability**

- EIA is a foundation tool
- EIA is a tried and tested process
- EIA is a legal requirement in many countries
- EIA is an integrative tool already
- EIA is well positioned for the next steps
- EIA is suited to capacity building

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2

**Using SEA to move toward sustainability**

- SEA adds value to foundation tool
- SEA complements and extends EIA
- SEA being adopted by more countries
- SEA addresses major alternatives
- SEA is step toward comprehensive options assessment

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3

**Current realities**

- EIA basics need strengthening in many developing countries
- SEA still used primarily by developed countries
- EIA and SEA yet to realise their full potential
- limited consideration of global, large scale changes
- current practice provides minimal level of 'sustainability assurance'

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4

**Emerging challenges**

- new challenges imposed by globalisation
- environmental impacts becoming larger, more complex
- increasingly difficult to predict and mitigate
- shift toward adaptive and integrative assessment
- emphasis on precautionary rather than predictive approach
- use of best estimate science to identify safe margins
- backed by monitoring, auditing and other checks

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5

**Considering future directions step by step**

- Step 1: What ideally should happen?
  - identify needed changes from national sustainability agenda
- Step 2: What realistically is likely to happen?
  - consider development aims and trends that apply locally
- Step 3: What probably could happen with capacity building?
  - reach conclusions based on strategies in place or pending

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6

**Key trends and imperatives for sustainable development**

- *impacts* – rate and scale of global change unparalleled
- *drivers* – population growth, increasing consumption and technology
- *response* – linkages must be assessed systematically and holistically
- *sustainability* – reconciling environmental, economic and social aims

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7

**Two main directions for EIA and SEA**

- 'upstream' toward sustainability appraisal by integrating EIA and SEA with other impact assessment tools
- 'downstream' toward environmental management by combining assessment, accounting and auditing tools.

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8 & 9

**Aspects and issues of sustainability appraisal**

- full cost analysis of development proposals
- equated with integrated impact assessment
- identifies economic, environmental, and social effects
- incorporates sustainability aims, principles, criteria
- clarifies trade-offs and facilitates balanced decision-making
- triple bottom line must be met at minimum level
- new approach to decision-making needed
- examples of applications include:
  - sustainability assessment of trade
- framework for environmental assurance and assessment
- core values and criteria for decision-making

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10 & 11

**Aspects and issues of integrated environmental management (IEM)**

- focus on environmental impacts of all development actions
- particular attention given to business and industrial operations
- EMS certified to ISO 140001 cover larger enterprises
- many activities and enterprises not subject to control
- lack of IEM framework and tools
- building blocks of IEM system include:
  - environmental accounting to cost depletion and damage
  - environmental assessment to provide sustainability assurance
  - environmental auditing to verify compliance and performance


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**Interim measures to improve EIA and SEA practice**

- move toward integrated approach step by step
- getting there will take time
- progress will vary from country to country
- use TNA to identify priority requirements
- identify improvements that can be made now
- identify improvements that could be made in near term
- identify improvements that could achieve sustainability appraisal over medium term