

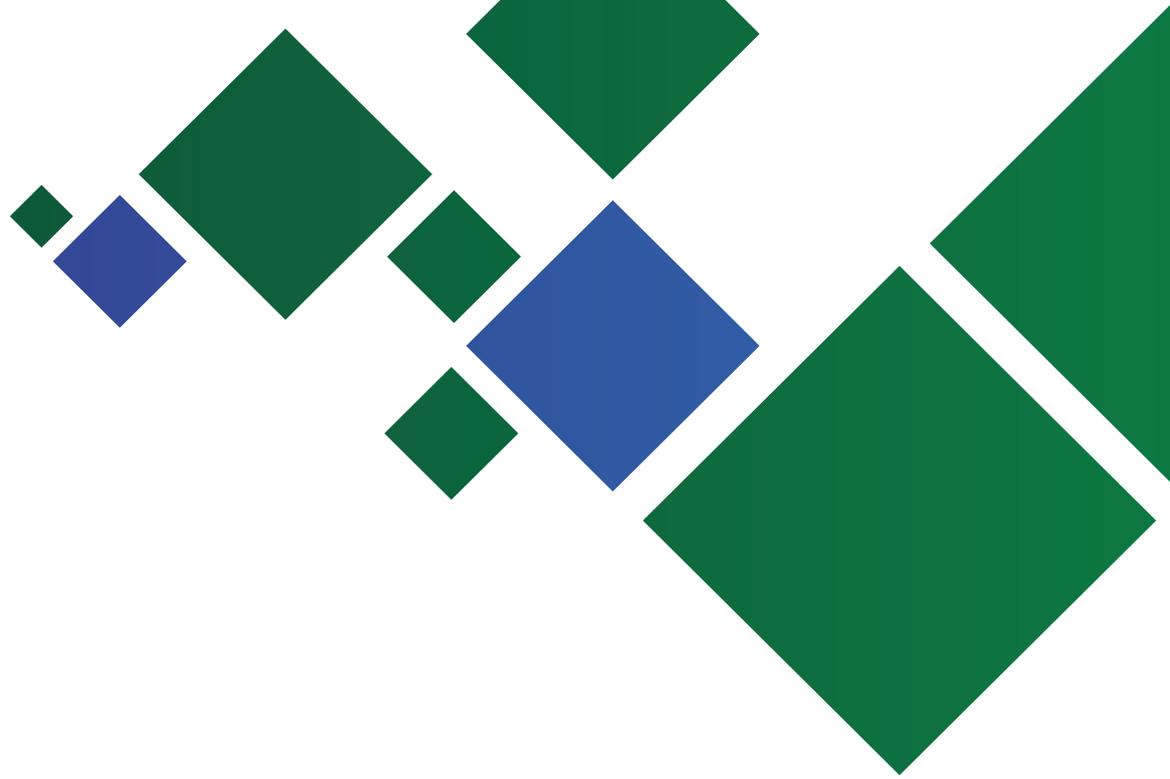


Environmental Impact Assessment



INTOSAI
Working Group
on Environmental
Auditing

The Audit Board of The Republic of Indonesia



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The Audit Board of the Republic of Indonesia (BPK)

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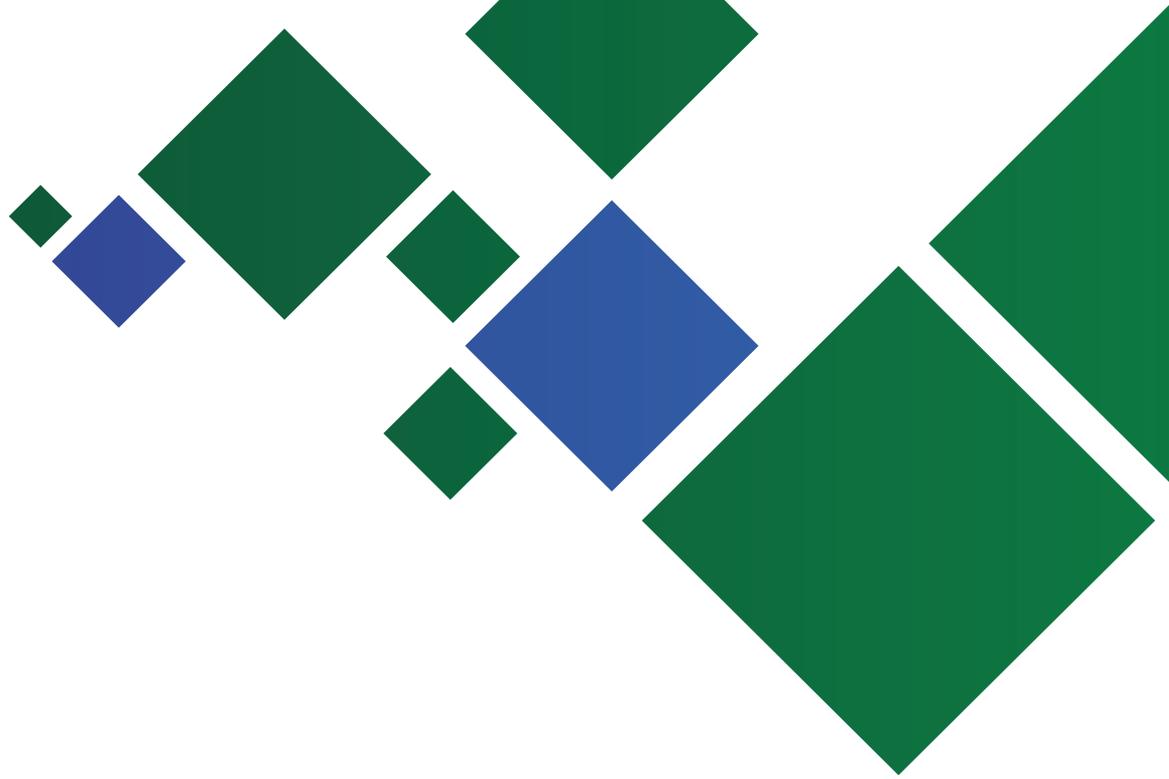
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- Assists supreme audit institutions (SAIs) in acquiring a better understanding of the specific issues involved in environmental auditing;
- Facilitates exchange of information and experience among SAIs; and
- Publishes guidelines and other informative material for their use.

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Foreword

The topic of this research paper on environmental impact assessment was derived from the INTOSAI Working Group on Environmental Auditing (WGEA) Seventh Survey on Environmental Auditing and WGEA discussions. The survey underlined the importance of continuously carrying out environmental audits as well as developing capacity through training and cooperation. Environmental assessment was identified as one of the key issues for the environmental audit work of SAIs that had not yet been addressed by the WGEA. In June 2013, at its General Assembly Meeting in Tallinn, Estonia, the INTOSAI WGEA approved its 2014 to 2016 work plan. The work plan outlined several goals, one of which (Goal 1) included updating existing and developing new guidance materials for supreme audit institutions (SAIs) and conducting research studies on emerging topics in environmental auditing. As part of the 2014 to 2016 work plan, a research project on environmental assessment was approved in connection with Goal 1.

Environmental assessment (EA) has many variations and is applied in different ways in different countries for specific projects and policies. EAs are mandated by national legislation and/or directives in most countries, are part of the commitments for international environmental treaties (such as the Convention on Biological Diversity), and are required by international banks (such as the World Bank).

This research paper aims to provide auditors with greater knowledge on environmental assessment. While the paper provides some information on the various types of environmental assessments, it focuses on one specific type, the environmental impact assessment (EIA). The paper defines an EIA, lists its components, and discusses implementation issues. It also provides insights on auditing challenges and offers some preliminary tools, such as sources of criteria, to auditing EIAs.

The project was initially co-led by the SAIs of India and Canada. The writing of this paper was led by Francine Richard, with the assistance of Makeddah John, from the Office of the Auditor General of Canada. We want to express our deepest gratitude to Elisangela Papst and Junnius Marques Arifa from the Tribunal de Contas da União of Brazil, who conducted a good portion of the work and without whom this paper would not have been possible. Special thanks are expressed also to Jahangir Inamdar, from the International Centre for Environment Audit and Sustainable Development (iCED) in India. As well, we want to thank Laurel Hyatt from the editorial team of the Office of the Auditor General of Canada.

We would like to thank all SAIs that have contributed to the preparation of this paper, by responding to surveys, providing feedback, or providing examples of EIA audits conducted in their countries. The paper is all the better because of their valuable assistance.



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Abbreviations & Acronyms

CBD	Convention on Biological Diversity
EA	Environmental assessment
EIA	Environmental impact assessment
INTOSAI	International Organization of Supreme Audit Institutions
INTOSAI WGEA	INTOSAI Working Group on Environmental Auditing
OECD	Organization for Economic Co-operation and Development
REA	Regional environmental assessment
SAI	Supreme audit institution
SEA	Strategic environmental assessment
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme

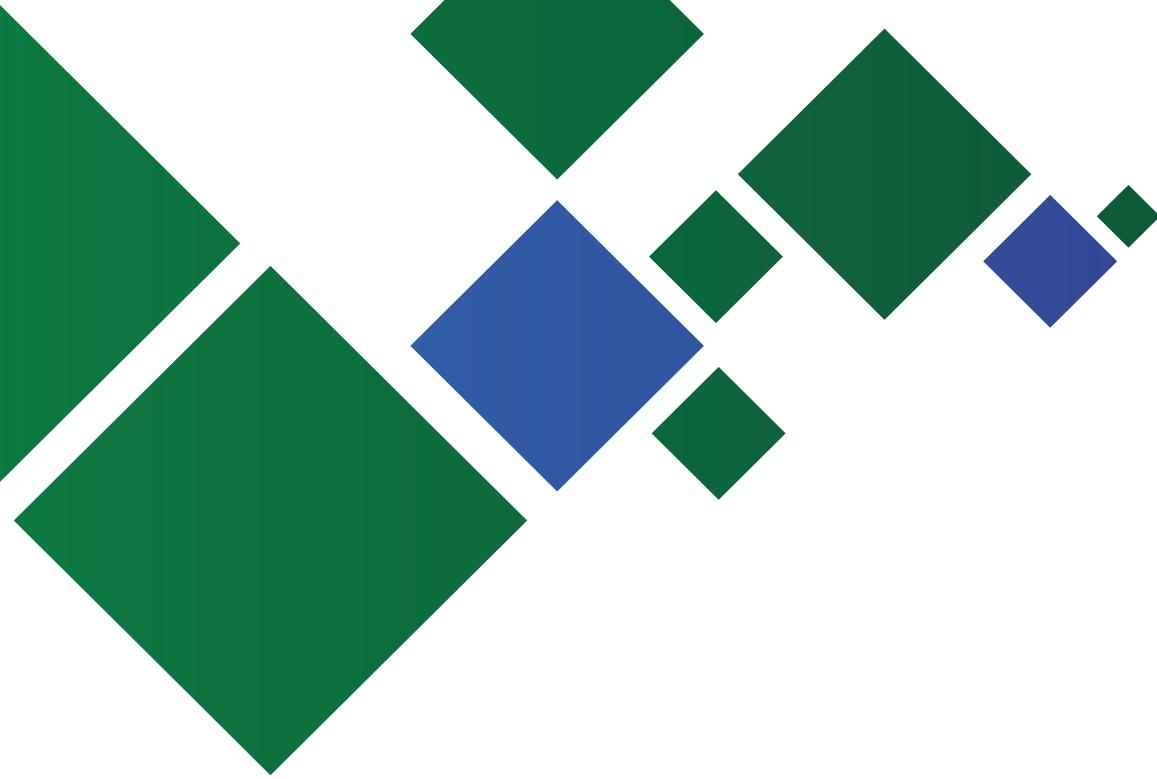


Executive Summary

The Seventh Survey on Environmental Auditing of the INTOSAI Working Group on Environmental Auditing (WGEA) underlined environmental assessment as one of the key issues to be addressed by the WGEA. Environmental assessment (EA) is applied in different ways in different countries for specific projects and policies. Conducting EAs is mandatory in national legislation and directives in most countries. EAs are also part of the commitments for international environmental treaties, such as the Convention on Biological Diversity, and are required by international institutions such as the World Bank. The topic of this research paper which was derived from the Seventh Survey, is part of the WGEA 2014 - 2016 work plan

This paper provides a brief overview of the origins of EA and the movements that contributed to its development. There are various types of environmental assessment and the paper presents them briefly, focusing on the environmental impact assessment (EIA) type. An EIA is specific to a project, to identify its environmental, social, and economic impacts.

The importance of EIA is twofold: to facilitate deliberate scrutiny of the environment in planning and decision making and to promote environmentally sustainable decisions. Integrating environmental concerns into development decisions means that a project's potential impacts have been avoided or mitigated, and that affected



people have been consulted and considered in decision making. EIA is designed to integrate project economic benefits and the development of natural resources, all of which are considerations of sustainability. Undertaking an EIA involves identifying likely impacts on the social and environmental landscape within which the proposed project site is situated. There are several parallels that can be drawn between the requirements of sustainability and EIA contributions, such as equity between generations, democratic governance, and socio-ecological integrity.

The paper describes the major stages of an EIA process, including the project proposal, scoping, public consultation and input, review and ultimate decision making on the project's fate, and monitoring and follow-ups. An effective EIA system ensures that institutions are involved and that high-quality assessment procedures are in place. EIA reports should provide decision makers with adequate scientific information so that they can take decisions that are based on complete understanding of project impacts. An effective system includes three main components: institutional arrangements, quality EIA reports, and implementation of mitigation measures and follow-up leading to improved projects (with minimal negative impacts and enhanced benefits).

As part of this research project, we surveyed supreme audit institutions (SAIs) on the challenges of implementing EIA in their

countries. The survey revealed that there are gaps between best practices and what transpires on the ground. For example, the concern of holding back economic development has sometimes hampered the EIA process, namely in developing countries in Asia and Africa.

However, regardless of the country, certain problems persist, as revealed by our survey of WGEA members, where respondents from both developed and developing countries reported that they struggle with overcoming certain difficulties. Challenges were linked to a number of problems or gaps relating to:

- legislation;
- organizational governance (lack of coordination between governments);
- institutional framework (unclear or overlapping responsibilities);
- decision-making capacity;
- the lack of participation from the public, of);
- the quality of EIA reports (lack of appropriate data and analysis);
- compliance (lack of proponents complying with EIA requirements);
- evaluation and follow-up (lack of monitoring, follow-up, and reporting systems)
- public participation; and
- accountability.

Benefits of auditing EIA are numerous, from promoting good governance and accountability of government performance to increasing transparency for taxpayers and other stakeholders. Auditing can contribute to improving EIAs by raising the public profile, contributing to the policy debate, providing pointers for improving the process, and safeguarding it from corruption. Another part of this EIA research project was to ask SAIs about their experience in auditing EIA. Respondents cited external challenges regarding:

- institutional arrangements and public participation,
- the quality of EIA reports,
- the management of impact mitigation and follow-up regime, and
- the implementation of an EIA process.
- Respondents cited internal challenges regarding
- the lack of technical expertise to conduct such audits,

- concerns in defining audit criteria and approach,
- the considerable amounts of documentation to review,
- unclear legislation and policy, and
- getting access to the relevant information.

This paper also briefly discusses some of the most authoritative sources of criteria for auditing EIA. Sources of criteria include:

- national legislation, policies, and standards;
- international agreements and conventions;
- specific requirements of financial institutions; and
- recognized best practices, expert advice, and guidance by internationally acknowledged organizations.

Environmental impact assessment has been a commitment made by many countries. This research paper outlines various issues in the implementation of EIA and highlights challenges auditors face when conducting an audit on this topic. Determining audit objectives and relevant criteria becomes even more important to examine areas that carry the higher risks.



Chapter 1

Introduction

While development is generally regarded as providing gains to an economy and communities, it can also produce significant adverse environmental impacts that degrade our natural capital and put our communal well-being at risk. Environmental assessment is a process to assess the consequences of proposed developmental initiatives such as projects, programs, and policies on the environment before they are carried out. Failure to consider and reduce adverse environmental effects before carrying out an initiative can lead to significant environmental degradation, damage to human health, and economic costs. Many countries around the world have considered the issue of a development's impacts upon the environment in one form or another.

While environmental impact assessments (EIAs) assess the environmental consequences of individual projects, strategic environment assessments (SEAs) assess the environmental consequences of programs and policies. The scope of this paper is limited to EIAs. We believe the topic of SEA would be better addressed on its own, potentially in a second document following this EAI research paper.

The United Nations Environment Programme defines EIA as a tool to identify the environmental, social, and economic impacts of a project prior to decision making. It aims to predict environmental impacts at an early stage in project planning and design, finds ways to reduce adverse impacts, shapes projects to suit the local environment, and presents the predictions and options to decision makers. Both environmental and economic benefits can be achieved from the use of EIA, such as reduced cost and time of project implementation and design, avoided treatment or

clean-up costs, and impacts of laws and regulations. While EIAs reflect the most desirable trade-offs, they can be challenging for governments to implement.

Although legislation and practices vary around the world, an EIA involves the following stages: project description and screening; scoping; identifying impacts and mitigation measures; reporting review and decision making; impact management; monitoring; and follow-up. EIAs may consider the full range of environmental, social, and economic impacts or may be broken down into smaller components, including the larger topics of environmental, social, and economic components but also other components such as sustainable development, culture, security, and health.

The research project's objective is to provide SAIs with a general understanding of what an EIA is, how one is conducted, what the challenges are in implementing it, and why it is important to the auditing community. The research provides sources where SAIs can go for more information. There are many sources and experts in this area around the world. Finally, the project provides SAIs with some examples of sources of criteria for auditing EIA drawn from other national audit offices.

1.1 A BRIEF HISTORY OF ENVIRONMENTAL ASSESSMENT

The history of environmental assessment (EA) goes back to the movement to preserve the environment. For example, in the United States, as early as 1872, national parks were established to preserve wildernesses and natural ecosystems. In the United Kingdom, the first Town and Country Planning Act enabled the local planning authority in 1947 to consider environmental factors when sanctioning development proposals. The concept of EA began to take root and emerge during the 1960s. For example, industrial waste and garbage generated from rapidly growing urban centres were choking many waterways; city smog levels soared beyond acceptable levels. The United States was the first country to assign mandatory status to environmental impact assessment (EIA) through its National Environmental Policy Act of 1969. Environmental assessment became part of the common lexicon among environmental stakeholders perhaps after the United Nations Conference on the Human Environment, held in Stockholm in 1972. The National Environmental Policy Act provoked the introduction of EIA policy in many countries in Europe and Asia. Canada, Australia, and France adopted EIA legislation in the 1970s, while the Netherlands and Japan adopted it in the 1980s. In July 1985, the European Community issued a directive making environmental assessments mandatory for certain categories of projects. Among the developing countries, Colombia was the first Latin American country to institute a system of EIA in 1974. In Asia and the Pacific region, Thailand and the Philippines established procedures for EIA in 1975 and 1978,

respectively. Countries like Rwanda, Botswana, and Sudan in Africa also have some experience of EIA.

Multilateral and bilateral agencies have also recognized the value of EIA as a decisionmaking tool. The United Nations, in its World Charter for Nature of 1982, stated that environmental impact assessment should be ensured to minimize adverse effects on nature. The Organization for Economic Co-operation and Development (OECD) issued recommendations on EIA to its constituent States in 1974 and for development aid projects in 1986. The United Nations Environment Programme (UNEP) in 1980 provided guidance on EIA of development proposals and set out goals and principles of EIA for the member countries in 1987. EIA then became an integral part of World Bank policy, which states that environmental issues must be addressed as part of overall economic policy. In 1989, the World Bank issued the Operational Directive on Environmental Assessment. Aside from the United Nations Law of the Sea Treaty, which was adopted in 1982, many other international treaties and protocols with provisions relating to EIA were concluded in the 1990s. In 1991, the United Nations Economic Commission for Europe and member states adopted a Convention on Environmental Impact Assessment in a Transboundary Context, known as the Espoo Convention. The Asian Development Bank published guidelines for EIA in 1990. Principle 17 of the Rio Declaration on Environment and Development signed at the United Nations Earth Summit on environment and development held at Rio de Janeiro in 1992 stated that the “environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority.” These and other landmarks in the evolution of EIA in various countries are presented in Appendix 1.

Over the past 40 years, EA has emerged as a proven and indispensable tool to address the possible environmental and socio-economic implications of plans and projects before they begin. EA seeks to include environmental considerations early in the planning and decisionmaking process for proposed activities. This allows particular attention to be given to avoiding, offsetting, or mitigating any significant adverse impacts and, whenever possible, enhancing or creating any positive impacts. EA’s intent is to ensure that development decisions are made with the full knowledge of their environmental consequences.

The principles of EA have been embraced through legislated policies, guidelines, and programs in more than 100 countries, states, and municipalities around the world. Now, nearly every member country of the United Nations (UN) has endorsed EA principles, effectively cementing its status as an essential environmental management tool in both international and domestic environmental laws. Despite this steady evolution, EA remains a relatively new decisionsupport tool for many countries that have only begun implementing this process over the last 10 years.

EA has also been adopted as a key policy by many multilateral development organizations and aid agencies, such as the World Bank, UN, United States Agency for International Development, and the Organization for Economic Co-operation and Development (OECD). The World Bank, for example, has included EA as one of its 10 safeguard policies used to examine the potential environmental risks and benefits of all Bank-supported operations. Since 1989, this policy has been formally extended to its lending operations, where recipient countries must fulfill the Bank's EA requirements apart from meeting any domestic EA obligations. Other international aid agencies, such as the Asian Development Bank and the Canadian International Development Agency, have mirrored this approach and have made the evaluation of environmental impacts a funding condition.

1.2 ENVIRONMENTAL ASSESSMENT TYPES

Environmental assessment is a generic term that is often used interchangeably for specific types of impact assessment, such as project-based environmental assessment or strategic-based environmental assessment. Three main types of EA can be broadly differentiated:

- strategic environmental assessment (SEA),
- regional environmental assessment (REA), and
- environmental impact assessment (EIA).

SEA and REA are broad-scale and are usually more complex than the assessment of an individual project. Although a brief description of all three types of EA will be provided in this section, EIA, which is the main focus of this paper, will be introduced in greater detail in sections 2 and 3.

Strategic Environmental Assessment

When the environmental assessment procedure is applied to assess effects of policies, plans, and programs, it is known as strategic environmental assessment (SEA). The purpose is to ensure that environmental issues are given adequate consideration and taken into account in the early stages of development policy making and planning. SEA refers to a range of analytical and participatory approaches that integrate the environment with economic and social considerations to assess policies, programs, and plans in context. The purpose of SEA is to:

- help understand the development context,
- appropriately identify problems and potentials,
- address key trends, and

- assess environmental and sustainable options (ones that act cautiously or prevent risks and stimulate opportunities) that will achieve strategic objectives.

At the policy level, SEA focuses on the political, institutional, and governance context of the decisionmaking process. For example, an SEA for a policy initiative is supposed to inform the decisionmaking process, helping to avoid environmentally costly mistakes before a particular course of action is decided.

While there is no fixed, prescriptive approach for it, the key stages of conducting an SEA would include:

- establishing the context and undertaking a needs analysis;
- using information (biophysical, social, institutional, and economic) to identify strategic options and their sustainability;
- making decisions on opportunities, factoring in the risks of strategic options to drive development into sustainability pathways; and
- ensuring active and sustained stakeholder engagement (collaborative processes).

Ideally SEAs should be undertaken as early as possible in the decisionmaking process. That means when the vision or the strategic objectives of the plans, programs, and policies are being established and long before the proposals for policies, plans, and programs are put forward. Applying the SEA tool increases the chance of anticipating, preventing, or mitigating negative environmental consequences, or enhancing any positive effects.

For example, in Portugal, SEAs were conducted for three regional plans: North Regional Territorial Plan, Lisbon Metropolitan Area Territorial Plan, and West and Tagus Valley Territorial Plan. The SEAs helped in deciding what sustainable development strategies should be considered in spatial and sectoral planning.

Just like a project environmental assessment allows the decision maker to reach better-informed decisions about the consequences of a specific project, the SEA provides the decision maker with information that could reduce the environmental costs that could follow from a particular policy, program, or plan.

Regional Environmental Assessment

Regional environmental assessment (REA) is also a strategic type of process that assesses the potential environmental effects of strategic policy, plan, and program alternatives for a region. It is an assessment carried out for a region or on a sectoral scale for a number of development activities, sector-wide programs, or multiple projects planned or proposed in a relatively localized area. Thus, REA can provide opportunity for more informed and efficient

downstream project-based environmental impact assessment and regional environmental management initiatives. In doing so, REA can support a preferred regional development strategy and environmental management framework, and inform subsequent project-based environmental assessment and decision processes.

This type of EA can reduce the time and effort required for conducting individual project-specific EAs in the same region. It may also help to identify major issues that need to be considered in studying individual projects and it allows the assembling of existing environmental data. Understanding and addressing environmental effects at broader regional scales is important to ensuring sustainable development and a desired level of environmental quality, both biophysical and socio-economic. REA allows for an early, overall analysis of the relationships between alternative futures for a region and the potential effects that may emerge from those futures.

Because REA is applied on a regional scale, it differs from an environmental impact assessment, which is applied to an individual project or activity.

For example, an REA was conducted in the United States by the U.S. Army Corps of Engineers for exploration and production of hydrocarbons in coastal Alabama and Mississippi. The purpose of the EA was to identify the cumulative impacts of the permits for hydrocarbon resource development projects in a coastal area over a 30-year period.

A strategic approach such as SEA or REA establishes the means of getting from here to there—a pattern of actions; a vision or direction. In other words, a strategic approach to assessment involves defining goals or visions (for a plan, program, or policy or for a region), proposing means for achieving them, and selecting the most desirable approach. An EIA, however, is conducted at the project scale level (Figure 1). Sections 2 and 3 describe EIA in more detail.

Figure 1 Differences between Strategic Environmental Assessment and EIA

Strategic environmental assessment	Nonstrategic assessment (project EIA)
Adopts a strategic and long-term perspective.	Focuses on the execution of a prescribed action with a short- or medium-term perspective.
Focuses on identifying a strategy for action and the means to accomplish goals and objectives.	Focuses on implementing a predetermined action, to bring closure.
Attempts to build a desirable future, not to know the future.	Knows the intervention and emphasizes predicting the outcomes.

Strategic environmental assessment	Nonstrategic assessment (project EIA)
Asks “what is the preferred development alternative or direction?”	Asks “what are the impacts of the proposed option and how can they be mitigated?”
Focuses on alternative options and broad scenarios of development.	Focuses on the proposed development scenario and potential alternative options (when warranted).
Operates at the level of public-private partnerships (PPPs) and often abstract strategies.	Operates at the level of projects and concrete development proposals.
Accepts that the strategy or PPP will change due to changing contexts and uncertainties.	Attempts to minimize uncertainty so as to remain consistent with the original proposal.
<p>Examples</p> <ul style="list-style-type: none"> ▪ a transport or infrastructure policy ▪ an aquaculture policy ▪ an energy policy or program ▪ a tax policy for renewable and nonrenewable energy 	<p>Examples</p> <ul style="list-style-type: none"> ▪ a highway construction project ▪ an aquaculture-specific operation ▪ an oil sands facility ▪ a wind farm

Source: Adapted from Canadian Council of Ministers of the Environment, Regional Strategic Environmental Assessment in Canada: Principles and Guidance, 2009.

Environmental Impact Assessment

The United Nations Environment Programme defines environmental impact assessment (EIA) as a tool used to identify the environmental, social, and economic impacts of a project prior to decision making. Although legislation and practices vary around the world, in general, an EIA:

- identifies potential environmental effects (both beneficial and adverse);
- proposes measures to mitigate adverse environmental effects and enhance beneficial effects;
- estimates whether there will be significant adverse environmental effects, after mitigation measures are implemented; and
- includes a follow-up program to verify the accuracy of the environmental assessment and the effectiveness of the mitigation measures.

EIAs may consider the full gamut of environmental, social, and economic impacts or may be broken down into smaller components, including the larger topics of environmental, social, and economic components but also components such as sustainable development, culture, security, and health. The process for EIA as practised in Canada, for example, integrates health, social, and environmental components. There are different

variations of EIA or parallel processes practised around the world to assess the impacts. Some of these types of EIAs and parallel processes to EIA are discussed below.

Cumulative impact assessment

A cumulative impact assessment is a developing subset of environmental assessment that has evolved as a way to capture wider implications in project assessment. It includes any cumulative environmental effects that are likely to result from a project in combination with other physical activities that have been or will be carried out. The cumulative effects are the combined effects of past, present, and foreseeable human activities, over time, on the environment, economy, and society in a particular place.

Health impact assessment

The World Health Organization defines a health impact assessment (HIA) as “a combination of procedures, methods and tools by which a policy, programme or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population.” HIA is an emerging practice that is closely related to EIA and aims to inform policy-makers about potential direct and indirect health effects in institutional contexts as diverse as urban planning, agriculture, energy, and economics. While some countries, including Australia and Canada, integrate the HIA within an EIA, other countries, such as the United Kingdom and Sweden, conduct an HIA as an independent appraisal.

Social impact assessment

A social impact assessment includes the processes of analyzing, monitoring, and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, and projects) and any social change processes invoked by those interventions. For certain projects, impacts on people can be by far the most important consideration. Adverse social impacts can reduce the intended benefits of a proposal, and can threaten its viability (as well as its long-term sustainability) if they are severe enough. In such cases, a social impact assessment is carried out as part of the EIA process, or sometimes as a parallel or separate review.

Cultural heritage impact assessment

A cultural heritage impact assessment is the analysis of potential impacts, negative and positive, on the full range of cultural resources of an area, which may result from proposed development or works or environmental trends. The assessment includes the design of measures to mitigate impacts that are unacceptable and maximize those that are beneficial. Per the environmental impact assessment directive of the European Union (EU,) cultural heritage is also considered in EIAs within the EU and potential impacts on cultural heritage of proposed developments are examined along with the EIA.



Chapter 2

Importance of Environmental Impact Assessment

The importance of environmental impact assessment (EIA) is two-fold: to facilitate deliberate scrutiny of the environment in planning and decision making and to promote environmentally sustainable decisions. EIA is a planning tool designed to assist decision makers in identifying and understanding potential impacts of proposed development projects early on to influence project design in order to prevent or mitigate negative impacts. When assessments are performed for individual projects, such as a dam, motorway, factory, mine, airport, highway, or refinery, the practice is commonly considered an EIA.

Consider these two example situations: a punctual change to a master plan to accommodate a new hospital or other infrastructure not initially planned at a specific location, and a new detailed plan to enable planning coherence to implement a project already decided. These are examples of situations that do not necessarily engage a strategic decision and will be more adequately assessed with an environmental impact assessment.

Integrating environmental concerns into development decisions means that important environmental components have been identified, potential impacts avoided or mitigated, and affected people consulted to have their opinions considered in decision making. The International Association for Impact Assessment, in collaboration with the Institute for Environmental Assessment (1999), outlined four basic objectives of EIA:

- ensuring the explicit consideration and incorporation of the environment in the development decisionmaking process;
- anticipating and avoiding, minimizing, or offsetting adverse significant biophysical, social and other relevant effects of development proposal;
- protecting productivity and capacity of natural systems and the ecological processes that maintain their functions; and
- promoting development that is sustainable and optimizes resource use and management opportunities.

2.1 CONTRIBUTIONS OF EIA TO SUSTAINABILITY

Environmental impact assessment is hailed by several countries as an instrument to achieve sustainable development. It is designed to integrate considerations of sustainability of development projects, which often represent significant economic benefits through employment, expansion of industry, and the development of natural resources.

The Canadian Environmental Assessment Act, 2012 states that one of its purposes is to “promote sustainable development in order to achieve or maintain a healthy environment and a healthy economy.” The purpose of the United States National Environmental Policy Act of 1969 is to “declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man.” Developing countries are of a similar mindset. For example, Botswana’s Environmental Assessment Act, 2011 requires environmental assessment practitioners to carry out their professional activities, in accordance with principles of sustainable development. Section 63 of Kenya’s 2012 Environmental Management and Co-ordination Act states that the National Environment Management Authority “may after being satisfied as to the adequacy of an environmental impact assessment study, evaluation or review report, issue an environmental impact assessment licence on such terms and conditions as may be appropriate and necessary to facilitate sustainable development and sound environmental management” (Kenya 2012, S. 63).

“Environmental impact assessment (EIA) is the pre-eminent regulatory tool used worldwide in the name of sustainable development. Whilst it may not be perfect for this purpose, and recognising that project-based EIA has been soundly criticised for its perceived failings, it remains the preferred and most widely used tool for project-level assessment and the key (if not only) sustainable development-oriented tool in many countries.” (Weaver et al. 2008, p. 91)

There are several parallels that can be drawn between the requirements needed to drive sustainability and the contributions that EIA makes to sustainable development, such as equity between generations, democratic governance, and socio-ecological integrity.

Equity and Socio-ecological Civility through Public Participation

In Canada, a 1998 report by the Commissioner of the Environment and Sustainable Development titled “Environmental Assessment—A Critical Tool for Sustainable Development” spoke to the public’s interest in environmental assessment as a means of protecting the environment for future and present generations. Public participation involves the citizenry to speak out against environmental damage because they understand the costs will be borne by themselves and/or their children. Public participation also facilitates civility because undertaking an EIA increases the local population’s environmental awareness, which can foster informed deliberation and collective responsibility and acceptability.

Democratic Governance through More Open Decision Making

By involving the public and providing independent, objective, and scientific information in the form of an EIA report, the EIA process increases transparency and accountability of the decisionmaking process. Stakeholders are given access to information and can thus improve participation. They also have the opportunity to incorporate their identity in decision making. Using science to assist policy making over time can alter policy processes and create more accountable and democratic governance structures.

Socio-ecological Integrity through Impact Management and Analysis of Alternatives

Undertaking an EIA early in the project cycle can help maintain and protect socio-ecological systems. This allows for the analysis of alternatives to modify project design in a manner that reduces and avoids negative environmental impacts. The impact management stage of the process provides mechanisms by which unavoidable impacts can be mitigated through compensation and environmental offsets such as the rehabilitation of damaged ecosystems. A certain synergism can also be created where proponents can couple their development with other initiatives that add value or maximize benefits.

For example, a diamond mining company in Western Australia decided to shift its operations—undertaken on Aboriginal land—from open-pit mining to underground mining. In doing so, the company also sought to couple its operations with initiatives to improve the health and livelihoods of the traditional Aboriginal owners. The company reached an agreement with the local Aboriginal community and established trusts to support short- and long-term financial benefits for future generations, enabling the community to benefit from the company’s profits.

2.2 PRINCIPLES OF EIA

The principles of EA have been embraced through legislated policies, guidelines, and programs in more than 100 countries, states, and municipalities around the world. Now, nearly every United Nations member country has endorsed EA principles, effectively cementing its status as an essential environmental management tool in both international and domestic law.

In order to be effective and to meet the goals of public engagement, environmental sustainability, and social sustainability, an EIA must follow certain basic principles (Figure 2) during its various stages.

Figure 2 Basic Principles of EIA

Principles	Brief descriptions
Purpose	An EIA should be purposive. In other words, it should be applied as a proactive tool that is integrated into the project planning process from the early stages, rather than being applied as a reactive regulatory tool.
Rigour	An EIA should be rigorous. EIA is science-based. Scientific inquiry can only be credible and effective if it is impartial, fair, and objective. This requires using scientific methodology and techniques to identify likely affected components; to predict and quantify the degree and severity of impacts; and to propose feasible measures to avoid, lessen, or compensate for such impacts.
Participation	An EIA should be participative. EIA operates within a socio-economic, political, and cultural context. The process thus should involve and engage the affected or interested public to express their views and concerns. These views should be reflected in documentation and elevated to the decisionmaking stage. The EIA should provide for such opportunities and is therefore participative.

Principles	Brief descriptions
Transparency	An EIA should be transparent. Consistent with the principle of participation in EIA is the requirement for transparency, which provides stakeholders with access to information on the EIA's content requirements, the limitations and difficulties encountered, and the key factors considered in decision making.
Efficiency	An EIA should be efficient. Efficiency—making the most of limited resources—is essential to the EIA process to ensure proponents and administrators arrive at meaningful and informed decisions while having met the EIA's requirements and objectives.
Systematic	An EIA should be systematic. In order to achieve the other principles of efficiency and rigour, an EIA must be undertaken in an orderly fashion.
Interdisciplinary	An EIA should be interdisciplinary. An interdisciplinary approach is required to address and integrate the varied disciplines (environmental, economic, and socio-political, including local or traditional knowledge) that constitute the subject matter of an EIA.

Chapter 3

Components of EIA

Environmental impact assessment best practice provides for a systematic, orderly process that should be applied early in the project planning cycle and in accordance with legislative and regulatory requirements and international standards of good practice. Undertaking an EIA involves identifying likely impacts on the social and environmental landscape within which the proposed project site is situated. Overall, EIA entails following a sequential process complying with legislative and other requirements and coordinating many stakeholders, while fully considering all pertinent social and environmental components.

3.1 STAKEHOLDERS

Environmental impact assessment is a regulatory process that involves a series of stakeholders (Figure 3). The objective of EIA is to consult these actors to ascertain their views not only for consideration but also for providing new information.

Figure 3 Key Stakeholders in the EIA Process

Stakeholders	Roles
Project proponent	The project proponent undertakes the development project and thus seeks approval from the EIA process.
Regulators	<p>The regulators are seen as the “gatekeepers” for the proponent seeking approval of new proposals. The regulatory authority’s role is to ensure the implementation of EIA policy and procedures as set out in the legislative framework. The regulators are thus involved in:</p> <ul style="list-style-type: none"> deciding on the type of environmental assessment to be undertaken, assisting in deciding on the environmental components that should be considered, reviewing the EIA report once completed, providing opportunities for meaningful public engagement, recommending decision impact management measures to the decision makers, and ensuring compliance.
Decision maker	The authority, upon the recommendation of the regulatory body, will decide to approve or disapprove the proposed action. This decision is at the discretion of that authority and is often influenced by not only the EIA report but other socio-political reasons.
EIA practitioners and consultants	The EIA practitioner is hired by the proponents to advise them on relevant EIA policies, practices, procedures, and administrative aspects and to undertake the technical work to produce the EIA report. This includes baseline studies and responses to public submissions.
Public	The public is consulted through the various stages of an EIA. It consists of stakeholders directly affected by the project proposal; special interest groups, such as environmental groups; and concerned individuals. The public has an interest in protecting the environment and ensuring its integrity for perpetuity.

3.2 STAGES OF THE EIA PROCESS

EIA involves a succession of stages, leading from the project proposal through the analysis, public input, review, and ultimate decision making that will determine the project’s fate. Figure 4 summarizes the major EIA stages and refers to the relevant sections 3.2.1 to 3.2.7 that provide more information on each stage below.

Figure 4 Major Stages of a Project-Specific EIA

Stages	What the stage involves
<p>Describe the project, including any related or linked projects.</p> <p>(Section 3.2.1 Project Description (and Screening))</p>	<p>Project description should include all the project phases (such as site preparation, operation, and decommissioning of a mine). The description can include linked projects (such as pipeline project and refinery). Also, projects may be combined because of proximity (for example, two industrial plants on adjoining properties).</p>
<p>Describe the environment (physical, human) in which the project is located.</p> <p>(Section 3.2.2 Scoping and Setting the Environmental Baseline)</p>	<p>For example:</p> <p>Is the project in an urban setting, an open field, or a forest?</p> <p>What are the soil types, water table, vegetation (flora), and animal life (fauna)?</p> <p>Is the project in an architecturally or historically important area?</p> <p>How is land currently used (for example, parks, hunting and fishing)?</p>
<p>Identify and evaluate the significance of potential environmental effects and consider possible mitigation measures.</p> <p>(Section 3.2.3 Identification of Impacts and Mitigation Measures)</p>	<p>The project’s impacts on the environment (such as pollution, destruction of wildlife habitat, or recreational use of land) must be considered, as well as the environment’s potential impacts on the project (such as periodic flooding). Are the potential environmental effects significant? For example, destruction of a habitat for sparrows may be insignificant, while destruction of a habitat for whooping cranes (an endangered species) may be significant. Many types of mitigation measures may be considered, including construction techniques, seasonal limitations on work, design features, operational procedures, and compensation measures.</p>
<p>Taking into account the mitigation measures, determine the residual projected environmental effects.</p> <p>(Section 3.2.4 Report Review and Decision Making)</p>	<p>After alternatives and mitigation measures have been explored, there still may be residual adverse environmental effects. Their significance should be determined to inform decision makers. The critical issue is that the assessment should ensure that those approving the projects are aware of all the potentially significant adverse environmental effects. Note that in some cases (such as where significant adverse impacts cannot be mitigated), decision makers may wish to consider other alternatives altogether to the project.</p>
<p>Approved projects should include a requirement to carry out the necessary mitigation measures.</p> <p>(Section 3.2.5 Impact Management)</p>	<p>Project approval should include controls or conditions to ensure that the proposed mitigation measures are actually carried out.</p>

Stages	What the stage involves
Verify that project and related mitigation measures have been carried out as approved. (Section 3.2.6 Monitoring)	This could be done by the approving authority directly, by independent third parties, or by obtaining certification from an expert, such as a professional scientist or engineer.
Follow up where appropriate to determine actual environmental effects and compare these with predicted effects. (Section 3.2.7 Follow-up)	This is most important if mitigation measures include new or unproved technologies or if there is uncertainty about the predicted environmental effects. Lessons learned about the environmental effects should be used in future environmental assessments, where appropriate.

Note: For public participation and consultation, environmental impact assessment procedures would include informing and consulting with stakeholders at most stages of the assessment. This usually includes the local population but can be widened to include a larger audience that has an interest in the project taking place.

Source: Adapted from the Office of the Auditor General of Canada, 1998 Report of the Commissioner of the Environment and Sustainable Development, Chapter 6: “Environmental Assessment—A Critical Tool for Sustainable Development”

Project Description (and Screening)

An environmental impact assessment process usually starts when the proponent of a development project seeks approval (such as a permit) and provides a project description to the approving authority (such as a regulator or a subsidizing organization). This information includes the project’s nature, extent, and proposed location; its various phases; and the level of activity entailed. The project description should contain enough information to allow the authority to decide the project’s suitability for an environmental impact assessment. Note that what constitutes a project may differ because it is defined mostly by legislation, which is specific to a country.

Screening is the process of determining whether the project should be submitted to an EIA (“screened in” or “screened out”), usually set by the regulatory framework. Screening ensures that environmental impact assessments are not undertaken on projects posing little social or environmental threat and that riskier projects are not overlooked. It also ensures transparency and accountability because there are benchmarks against which decisions for undertaking an EIA are made.

Once it is determined that the project will undergo an EIA, the scope of the EIA is defined by identifying the parts to be included in the environmental assessment analysis.

For example, Australia’s process has up to four levels of EIA ranging from minimal attention to an extensive process involving a public inquiry. The screening decision will determine which level to apply. The four levels in order of ascending difficulty and involvement include:

- Assessment on referral information: A decision is made based on the application.
- Assessment on preliminary documentation: A decision is made based on further information requested from the proponent.
- Assessment by environmental impact statement: A decision is made once an EIA is undertaken with terms of reference set by the Minister.
- Assessment by public inquiry: Commissioners are appointed by the Minister to undertake the inquiry and provide a report to the Minister.

Scoping and Setting the Environmental Baseline

As mentioned, one of the basic principles of EIA is efficiency. Projects with seemingly more significant impacts are subject to more rigorous assessments and vice versa. With this in mind, the focus should be on limiting the extent of the EIA to the most important and relevant issues and concerns. This process is called scoping and it generally includes a number of considerations (Figure 5).

Figure 5 Major Considerations of EIA Scoping

Consideration	What the consideration involves
Identifying project alternatives	<p>There are two types of project alternatives: alternatives to meeting the project’s goals and outcomes and alternative means of undertaking the project. Alternatives should be identified through multi-stakeholder activities to ensure that public opinion and expert information is incorporated in alternatives analysis.</p> <p>For example, if a city has proposed building a hydroelectric power plant to meet the energy needs of a growing population, an alternative to the project could be an incentive program for residents to retrofit their homes to use solar energy. Thus the need for the hydroelectric project may no longer be there. However, the project’s purpose—fulfilling energy demands of a growing population—is met.</p>

Consideration	What the consideration involves
Identifying the more pertinent issues to be addressed	The pertinent issues or important components to be considered when undertaking an EIA relate to the aspects of the social and physical environment that are deemed important by both the scientific community and the public at large. These issues of concern, termed “valuable ecosystem components” (VEC), include such things as wildlife populations, water quality, health, and well-being. VECs should be included within the EIA scope if they are likely to be affected by the proposed project and if their impacts can be detected through measurable indicators and criteria.
Defining the spatial and temporal boundaries	The spatial and temporal boundaries are the bounds within which the environmental baseline should be established.
Establishing baseline data	The environmental baseline represents the current conditions of the environment (in the absence of the project) and the conditions whose subsequent changes can be identified and measured (Noble 2010). It allows for the preliminary identification of project impacts and underscores the issues and VECs that require further study. The baseline study often includes air quality, water quality, employment, and other commonly affected socio-environmental factors.

Source: Adapted from Noble (2010)

Identification of Impacts and Mitigation Measures

Fundamental to EIA is the ability to predict the potential impacts of a proposed project. Once baseline data has been established, and there is knowledge of the current state of VECs coupled with future trends in the absence of change, the next stage is to predict how the project will change the state of VECs. Predicting impacts is difficult and highly speculative given the dearth of information of cause–effect relationships in the human and physical environment. In order to reduce uncertainty, when predicting impacts, the following should be considered:

- the impacts observed from past but similar projects;
- knowledge of past, present, and future projects whose impacts may affect the future project;
- information about how VECs respond to change; and
- the interaction between socio-economic and environmental components and VECs.

When predicting impacts, the principles of impact classification should be adhered to, in order to determine the impacts’ level of significance. Impact classification provides information on the various facets of an impact and ultimately determines the impact’s significance. These facets include:

- the impacts of nature (such as adverse, additive, and synergistic);
- the duration of the impact;
- the magnitude and spatial extent;
- the degree of reversibility; and
- the probability of the impact occurring.

Significance is a function of the impact classification and the value attached to the VEC. For example, an impact would likely be deemed significant if it is:

- adverse, long-lasting, and will lead to tremendous change over a large expanse;
- irreversible and highly probable of occurring; and
- directed at a sensitive ecosystem for endangered wildlife to which the public and scientific community have attached great value.

Significance can be determined through several approaches, including:

- a technical approach, which uses quantitative methods;
- collaborative methods that use subjective, value-based judgments to determine significance;
- reasoned argumentation, which uses data, information, and perspectives to develop reasoned arguments that support significance determination; and
- the composite approach, which uses a combination of the above-mentioned methods.

Predicting impacts and determining significance requires comprehensive scrutiny, examination, and analysis. This stage plays a critical role in designing useful impact management mechanisms and ultimately in the decision of whether or not to approve the project and the conditions under which it is to be undertaken. It is therefore important that the methods used to arrive at impact predictions and significance are rigorous, using best practicable science and a variety of proven analytical and technical methods, including public consultation to ensure the process is participative. Furthermore, methods and criteria should be clear, replicable, substantiated, and easily accessible by the public in order to ensure transparency of the process. Appendix 2 offers an example of a matrix used in identifying impacts from a project on the environment.

Report Review and Decision Making

Once the EIA report is completed, a review is undertaken to:

- assess if the information presented in the report is adequate for decision making,
- recommend remedial measures to correct deficiencies,
- obtain public input,
- ensure key findings are clearly stated, and
- provide advice on implications for decision making.

Reviews may be internal and conducted by the regulator or they may be an external, independent process conducted by independent experts to assess EIA report quality. While internal reviews may be more cost-effective, external reviews allow for greater transparency and rigour and often result in the documentation of results.

Best practices for reviewing the report include:

- setting the scope of the review;
- selecting reviewers, such as an interagency committee or an independent panel;
- identifying review criteria;
- carrying out the review;
- determining remedial options; and
- documenting the review results.

Impact Management

“Impact management involves plans or strategies designed to avoid or alleviate anticipated impacts generally perceived as undesirable and to generate or enhance effects seen as beneficial” (Noble 2010, p. 149). These management approaches can range from proposing project design modifications that can avoid the impact to accepting that the adverse impact will occur and compensating for it. Potentially adverse effects can be minimized through mitigation measures. Those effects that cannot be avoided or mitigated can be rectified through various rehabilitation and restoration methods. Impact management includes the means to create or enhance potentially positive impacts such as employment or training and certification. For impact management to be effective, it must continue beyond the project implementation phase and can be formalized into an environmental management system, which is a process of continual checking and improving. Environmental protection plans are another formalized measure to ensure impact management effectiveness and are mandatory under an EIA. They are detailed plans identifying the impact

management methods and the way in which they should be implemented. Impact benefit agreements are legally binding agreements between local communities affected by the project and the project proponent. These agreements go beyond the EIA's impact management measures and cover monetary compensation and other benefits for these communities.

The revised report is submitted to the decision maker, who can impose conditions to the decision to ensure that impact management measures and other controls such as an environmental management plan are carried out. Appendix 3 outlines examples of conditions imposed on a uranium mine in Canada.

Monitoring

Monitoring allows for the provision of information on environmental effects and supports the environmental management systems in place. Monitoring can be undertaken by the regulatory authorities, third parties, or technical experts. For follow-up and monitoring to be effective, they must be systematic and rigorous to ensure structured processes are followed.

Example (a)—Ongoing monitoring

For a large construction project in the province of British Columbia, the Canadian Coast Guard required the proponent to hire a qualified guardian (or environmental monitor) to ensure that mitigation measures were put in place as intended. The environmental monitor was to provide the authority to issue orders, including stop-work orders, to ensure that the project was carried out as planned.

During construction, heavy rainfall, combined with operating procedures that did not comply with those recommended by the responsible authority, threatened to cause serious environmental damage from the runoff. The environmental monitor ordered work to be stopped and corrective measures taken. Without the environmental monitor, there could have been serious damage to the environment.

Example (b)—No monitoring

As part of the project approval for the construction of a golf course in the province of Nova Scotia, the Atlantic Canada Opportunities Agency required the proponent to take mitigation measures to avoid the type of consequences that environmentalists are concerned about with golf courses: runoff of fertilizers and pesticides, and soil erosion.

As with the British Columbia case in Example (a), this project had to contend with heavy rainfall, and the contracting procedures did not fully comply with the mitigation measures outlined in the environmental assessment. However, unlike the other case, the implementing organizations did not take steps to ensure that the project's construction was monitored. The result was that soil erosion did occur. These consequences might have been avoided or reduced if the project had been adequately monitored.

Follow-up

Too often, proponents fall into the “build it and forget about it” syndrome, yet the effective implementation of mitigation measures is what makes a project sustainable. Mitigation and follow-up programs allow for adjustments and corrective actions throughout the implementation and operation of a project. Follow-up is therefore important to verify the predictions made during the study and to assess the effectiveness of the impact management measures in order to modify or implement new ones.

For example, in Canada, several major hydroelectric projects have been assessed (under the Canadian Environmental Assessment Act, 2012) since 1995. Requirements for implementing mitigation measures, conducting follow-up activities, and reporting on results and corrective actions were included in the federal regulatory approvals issued after the environmental assessments.

Because the reservoirs created with the hydroelectric projects have an impact on mercury levels in fish and is a key environmental concern, a follow-up program and additional studies (such as on fish productivity) were to be conducted to measure actual mercury levels and to compare these with predicted effects. Pursuing this, the proponent must provide an annual report on fish productivity. The responsible entity analyzed the proponent’s annual report and conducted its own field visits to verify the accuracy of the information provided. The entity ultimately required the proponent to improve future follow-up activities in relation to fish spawning and to take corrective actions.

3.3 PUBLIC CONSULTATION

Participation in an environmental impact assessment is often subject to a country’s socio-political landscape. In some countries, the legal framework provides opportunities for public input and public consultation is seen as a key function of EIA. For example, one of the nine purposes of the Canadian Environmental Assessment Act, 2012 is to “ensure that opportunities are provided for meaningful public participation during an environmental assessment.” In the United States, the process is designed to incorporate stakeholder views in decision making. European Union nations party to the Aarhus Convention have established public participation at various stages of the process. On the other hand, some countries have no legal requirements to include public input. EIAs in lesser developed countries tend to focus on the technical aspects with little public participation. For example, Brazil’s process focuses heavily on regulatory input on project design and operations.

Public participation varies from providing adequate notice to the public of proposed projects to providing access to full information about the project, and from requesting commentary from the public to including the public to a greater extent in more formalized forums such as a public inquiry. Advantages of

involving the public are many. The public can provide information including traditional knowledge, highlight more socially acceptable solutions, minimize conflict and legal liabilities, and help build trust between people and proponents (Noble 2010).

Best practices include provisions for transparency and accountability in decision making, which calls for public input. Public consultation practices should be inclusive, adapted to the context, initiated early, and sustained and transparent. Opportunities for public participation are therefore required at most of the EIA stages, including during screening and scoping, during the preparation of the EIA report, after completion of the report and prior to decision making, and during the follow-up and monitoring stages. Participation should be supported either financially or otherwise and it should occur at the most appropriate level of decision making.



Chapter 4

Implementation of Environmental Impact Assessment

Environmental impact assessment has been used for a wide range of reasons and has often carried a number of benefits. The main benefits of EIA can be summarized as:

- improved project planning (design and siting);
- informed decision making (with improved opportunities for public involvement in decision making);
- environmentally sensitive decisions;
- increased accountability and transparency during the development process;
- improved integration of projects into their environmental and social setting;
- reduced environmental damage;
- effective projects (meeting financial and/or socio-economic objectives); and
- a positive contribution to achieving sustainability.

To attain those benefits, EIA has to be implemented effectively. However, the effectiveness of EIA, in some cases, has fallen below expectations. There are some key issues associated with EIA that must be addressed in order to achieve these expectations.

4.1 EFFECTIVENESS OF AN EIA SYSTEM

An effective EIA system implies that institutions are involved and that high-quality assessment procedures are in place to generate successful achievements. EIA reports should provide decision makers with adequate scientific information so that they can take decisions that are based on complete understanding of project impacts. In other words, a good EIA will lead to better decisions. Momtaz and Kabir (2013) characterize such an effective system (Figure 6) as being based on a three-dimensional approach, including:

- the means that enable a system to work (institutional arrangements);
- the outputs that indicate the procedural performance of the EIA (quality of EIA reports); and
- the outcomes that speak to the achievements of the EIA process (a better development project with minimal negative impacts, enhanced benefits, and the implementation of mitigation measures).

Dimensions of Effective EIA

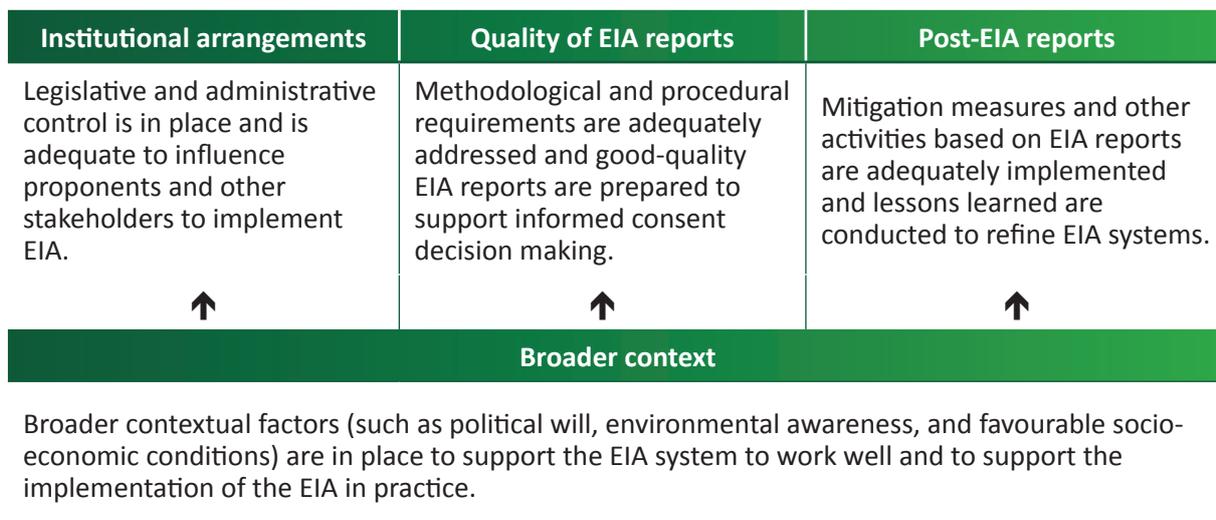
The EIA effectiveness then implies that an adequate institutional arrangement can lead to an effective EIA process that in turn generates a good-quality EIA report. Adequate institutional arrangement and quality EIA reports may lead to adequate implementation of mitigation measures that will avoid or reduce the impacts.

Institutional arrangements and public participation

The organizational management aspect of the EIA process is most effective with solid administrative and legal frameworks capable of controlling the proponent's activity within the process. Such frameworks, when adequate and robust, allow for the following:

- The authority is competent and has defined roles, responsibilities, structures, and processes for managing the process.
- There is a legal basis for EIA (with corresponding regulations and guidelines).
- The authority is able to recommend a decision to the decision maker based on the EIA report.
- Consultants are subject to professional standards and codes of conduct.
- The public can influence the EIA process through consultation and engagement.

Figure 6 Effective Environmental Impact Assessment System



Source: Adapted from Momtaz and Kabir 2013.

Quality of EIA reports and decision making

The second aspect of an effective EIA system is the technical and scientific quality of the EIA report. It is assumed that a good EIA report will better inform decision making. Studies have shown that the quality of the EIA report is determined by the adequacy of the entire EIA process, which requires the following.

- All stages of the EIA process are adequately undertaken.
- The EIA report follows (and is reviewed) according to the prescriptions of the terms of reference.
- Adequate time and financial resources are available for EIA report completion.
- Both the EIA process and report are transparent, with the public participating.

Post-EIA implementation of mitigation and follow-up

The post-EIA stage of an effective EIA system is to ensure that plans and measures recommended in the EIA report are implemented and monitored. Implementation of mitigation measures and follow-up are critical to the substantive outcomes of an effective EIA: better project design, minimal negative impacts, enhanced benefits, and environmental protection. Without this, institutional arrangements and good-quality reports are not enough to ensure environmental protection. The post-EIA stage thus requires the following.

- Impact management measures are adequately implemented.
- The authority fulfills its duties in overseeing and monitoring the implementation of such measures.
- The community participates during the implementation of impact measures.

Other Influencing Factors

“Any evaluation of EIA effectiveness is only meaningful when made in the socio-economic, political and cultural context of the country concerned” (Morgan 2012, p.10). Such contextual variables are highly influential on the decisionmaking process and at times are more influential than the environmental impact assessment process itself. The socio-political context of an EIA can bear greatly on the decisionmaking process; an environmental impact assessment is not undertaken in a vacuum. The legal, political, administrative, and cultural context surrounding an EIA system determines many of the differences among countries with regard to how the tool is used. For example, in the United States, the process incorporates stakeholder’s views in decision making, while Brazil’s process focuses heavily on regulatory input on project design and operations. In lesser developed countries, EIAs tend to focus on the technical aspects with little public participation.

4.2 CHALLENGES OF EIA IMPLEMENTATION

As part of this research project, we have consulted with SAIs on the challenges of implementing EIA in their respective countries. In 2015, WGEA members were surveyed to identify the main issues that countries around the world are consistently facing when implementing EIAs (Appendix 4). Although every EIA system is unique to a country because of its specific set of legal, administrative, and political circumstances, countries around the world are facing very similar issues in implementing EIA. Issues were linked to a number of problems or gaps relating to legislation, organizational governance, institutional framework, decisionmaking capacity, the EIA process, quality of EIA reports, compliance, evaluation and follow-up, public participation, and accountability. Ten top problem areas were identified by 20 SAIs (Figure 7).

Figure 7 Summary of Issues Relating to EIA Implementation

Issues	Examples
<p>Lack of monitoring, follow-up, and verification during the EIA process</p> <p>Regarding the EIA process, the major problem identified by SAIs is the lack of monitoring, follow-up, and verification mechanisms by regulators when evaluating EIA effectiveness. This part of the EIA process has structural weaknesses compared with the other stages. Building a quality control into the EIA process is essential to reduce the gaps between the environmental mitigation measures defined by the EIA and what was actually implemented in the field by the proponents.</p>	<p>Costa Rica—No regulations about monitoring and reports; insufficient monitoring of the activities and projects; and lack of criteria to conduct monitoring.</p>
<p>Insufficient evaluation of environmental impacts of projects after their implementation</p> <p>After the implementation of a project, the environmental impacts of its operation are not evaluated appropriately by regulators. A systematic mechanism to monitor and evaluate the environmental impacts is needed to ensure the effectiveness of the measures predicted by EIA to avoid and mitigate impacts.</p>	<p>India—No mechanism to assess effectiveness of environmental impact of the project after it has been set up.</p>
<p>Proponents not complying with EIA requirements and conditions</p> <p>There are disparities between the environmental control measures set by the EIA and what is actually implemented in the field by the proponents. A weak enforcement of EIA laws and regulations might induce proponents not complying with EIA requirements.</p>	<p>Bahamas—The Bahamas Environment, Science and Technology Commission, established in 1994 to coordinate the protection and conservation of the environmental resources of the Bahamas, is an advisory body and does not have any enforcement power to ensure the compliance by proponents with EIA requirements.</p> <p>India—Ineffectiveness of post-project compliance, with no general standards to determine project compliance with the mitigation measures, and no process for informing staff and decision makers of the relative success of mitigation measures.</p>
<p>Deficient monitoring and reporting systems</p> <p>In the absence of a good monitoring and reporting system, it is difficult for governments to report and measure the effectiveness of the implementation of EIA or to identify where further actions are required.</p>	<p>Bahamas—There is no systematic approach to ongoing monitoring of developments for EIAs once the projects are in operation. Such monitoring is required to ensure compliance with environmental standards such as pollution emission controls.</p>

Issues	Examples
<p>Lack of coordination between different sectors or governments</p> <p>Environmental impact occurs at all levels, from local to global, and in different sectors, from large dams to aquaculture projects. Therefore, EIA typically addresses issues and impacts that are complex, controversial, and cross-cutting, transcending both jurisdictional and disciplinary boundaries. Governments need to improve the integration and coordination of their work at different levels and sectors, avoiding duplication of efforts and resources. Weak coordination among national, regional, and local governments and among government departments, agencies, and ministries might compromise the effectiveness of EIA implementation.</p>	<p>Bhutan—No proper coordination among different agencies.</p> <p>Estonia—Local governments have been given greater responsibility of verification of the EIA process in circumstances where they do not have enough competence and resources.</p>
<p>Lack of analysis (economic, social, and environmental) supporting decisions</p> <p>Governments are not taking into account the economic, social, and environmental aspects of a project when making decisions. Most governments are not ensuring that the major environmental impacts are being considered in an integrated way before large sums of money are committed to a project. Many decisions are made on a cost-benefit analysis that does not include environmental issues.</p>	<p>Honduras—The economic and political interests have outweighed the environmental aspects and good management of natural resources.</p>
<p>Lack of data to support the decisionmaking process and evaluate EIA performance</p> <p>Government entities do not have sufficient and robust environmental data to support their decisions and to evaluate the EIA performance. Up-to-date information and data need to be in a form suitable for processing many screening decisions and EIA evaluation.</p>	<p>Estonia—Lack of monitoring data that would allow assessment of the quality of the EIA process and the effectiveness of mitigation measures.</p> <p>Jordan—Difficulty to access environmental information.</p> <p>Kuwait—Unavailability of sufficient environmental information.</p> <p>Uganda—Incomplete database records.</p>
<p>Lack of participation from affected publics and the general public in the decisionmaking process</p> <p>To improve public trust, governments must provide key stakeholders (communities, groups, and parties directly affected by or with an interest in the project and/or its environmental impacts) the opportunity to participate in the project planning process before a decision is made.</p>	<p>New Zealand—Lack of public participation with more centralized decision.</p>

Issues	Examples
<p>Deficient analysis of the interrelationships and integration of social, economic, and biophysical aspects</p> <p>EIA is institutionalized primarily to predict and mitigate the biophysical, social, economic, and other related effects and consequences of proposed development schemes and actions. To be able to predict those effects, it is necessary to integrate economic, social, and environmental aspects during the analysis EIA.</p>	<p>India—No process is available to assess cumulative impacts of the proposed project on the geographical area, in terms of biodiversity impacts, pollution impacts, social impacts, economic impacts, and so on.</p>
<p>Unclear or overlapping responsibilities</p> <p>The institutional framework for the EIA system includes different government departments, agencies, and ministries, in order to integrate development and environmental aspects. However, it is not clear the specific role each one of those entities plays and what they are responsible for. As a result, there are overlapping responsibilities across those entities that compromise the effectiveness of the EIA implementation, by duplicating efforts and lacking coordination among them.</p>	<p>Brazil—Legal framework does not clearly define which level of government (national, regional, or local) is responsible to carry out the EIA process according to the project’s size and type.</p>

Examples of Factors Hindering EIA Effectiveness Found in the Literature

There is a host of literature that further documents and mirrors the issues relating to EIA implementation, but it is important to note the particular challenges facing developing countries. There are gaps between best practices promoted in the literature and by international bodies compared with what transpires on the ground. For example, EIA quality in Africa is challenged by low levels of public awareness of environmental concerns, limited expertise and experience, and a lack of coherent legal frameworks and guidelines. While gains have been made with regard to public involvement in the process, EIA in Africa is still hampered by time, money, literacy, and linguistic and other social barriers.

The concern of holding back economic development can also hinder EIA for public debates. For example, media scrutiny in South Africa in 2008, when EIA regulations were drafted, described the EIA process as a “green hand brake” that resulted in “development speed bumps.” The situation is not much different in many Asian countries. While the wealthier jurisdictions, such as Japan, Hong Kong, and South Korea, have more established and robust EIA regulations and systems, the poorer Asian countries, such as Laos, Thailand, Cambodia, and Vietnam, also suffer from EIAs of low quality, limited public participation, and preoccupation that EIAs

stand in the way of economic growth. In South America, political unrest, inefficient bureaucracy, economic inactivity, and little to no public participation plague the EIA process. In addition, EIAs are undertaken simply for compliance and often after the project has already been approved. Additional problems identified in developing countries include decision making that is not transparent, confidentiality restrictions on EIA reports, and the implementation of EIA late in the planning cycle.

Developed countries such as Canada, Australia, and the United States have well-established EIA systems, while developing countries may be “falling short of international standards,” with EIAs often hampered by issues pervasive throughout these countries (Li 2008, p. 1). Lack of human, financial, and technical capacity; weak enforcement of policy; and a socio-political context often less environmentally focused and more pro-development are examples of some of the obstacles faced by these countries. Regardless of being a developed or developing country, certain problems persist, as revealed by the survey of WGEA members, where respondents from both developed and developing countries reported that they struggled with overcoming certain difficulties.

4.3 CHALLENGES TO EIA EFFECTIVENESS

Environmental impact assessment has been adopted internationally by many countries, becoming widely institutionalized. However, it does not ensure an effective EIA implementation. The issues of EIA implementation present particular challenges for its effectiveness. The main challenges, based on the top issues identified by our survey respondents, are:

- **Establishing quality control:** establishing mechanisms for quality control of EIA performance, with the development and implementation of more effective monitoring, follow-up, and verification systems to help bridge the gap between theory and practice
- **Building legal enforcement:** building environmental and social safeguard measures into the EIA process, backed by legal and regulatory mechanisms for their compliance and enforcement
- **Improving EIA systems:** improving EIA systems to address root causes of environmental deterioration and linkages among social and economic issues, based on an integrated approach to implementing sustainable development
- **Designing robust source data:** designing a continuous, reliable, and robust program to collect and analyze valuable sets of environmental data and information to ensure a consistent supply of source data for EIA reporting, evaluation, and follow-up

- **Strengthening public participation:** national, regional, and local governments increasingly seeking better ways to fulfill their regulatory mandates while constructively engaging the public in the EIA decisionmaking process, by strengthening public participation programs and establishing different participatory mechanisms to support the decision
- **Establishing responsibility and accountability:** developing a comprehensive EIA institutional framework is able to understand clearly which entity is responsible for what in terms of strategic planning, environmental regulation, information, assessment, monitoring, and evaluation; at which level of government (national, regional, local); and how such different entities, sectors, and governments are related to each other.

Chapter 5

Auditing Environmental Impact Assessment

Auditing the system that regulates environmental impact assessment sheds light on issues that impair its effectiveness. It also supports policy makers in their oversight role by assessing whether they are using funds for intended purposes and are in compliance with legislation.

5.1 RELEVANCE OF AUDITING EIA

Auditing can provide insight on problems, resources, roles, and responsibilities and inform which government programs are working and which are not, thereby stimulating thoughtful reconsideration of solutions. Auditing can also bring to light emergent threats to an organization's mandate.

As well, auditing can contribute to improving EIAs and increasing their effectiveness through:

- raising the public profile,
- contributing to the wider policy debate,
- providing well-considered pointers on improving the process to decision makers, and
- safeguarding the process from corruption.

Additional benefits of auditing EIA are the promotion of good governance, accountability through oversight, and transparency by imparting insight into government performance to the legislatures, taxpayers, and other stakeholders.

5.2 RESULTS FROM PAST AUDITS

Another part of this EIA research project was to ask SAIs about their experience in auditing EIA. SAIs were asked to complete a survey to share and to outline the issues they have encountered (Appendix 5). Additional audit reports from Canada (2009 and 2014), the United States (2006), Australia (2002), and Brazil (2009 and 2011) were also consulted to gather findings from EIA audits.

Overall, SAIs found a lack of established and systematic regulatory procedures and approaches for administering the EIA process and for transparent and meaningful public participation. Weak or deficient institutional frameworks were found regarding reporting on outcomes. Directives guiding how other responsible authorities are to be involved in the process were unclear. Regulations for monitoring and reporting and consistency in decision making were unclear or nonexistent. Issues most commonly found have been categorized in Figure 8 according to the three dimensions of an effective EIA framework (described in Figure 6).

Figure 8 Top EIA Issues Found in Various Audits

Issues	Examples
Institutional arrangements and public participation	<ul style="list-style-type: none"> ▪ Lack of guidance for agencies undertaking EIA (agencies relying on their own judgment, which can give rise to delays and inconsistencies in decision making) ▪ Lack of coordination between agencies; absence of leadership ▪ EIA legislation and guidelines not adhered to or observed ▪ Deficiency in public consultation (for example, too short period, insufficient funding)
Quality of EIA reports and decision making	<ul style="list-style-type: none"> ▪ Lack of formal methodologies for producing an EIA report ▪ Identification of environmental impact not completed comprehensively, resulting in neglecting certain environmental components ▪ Lack of a good-quality EIA report
Post-EIA, impact management and followup regime	<ul style="list-style-type: none"> ▪ Lack of implementation, evaluation, and monitoring of mitigation measures ▪ No regulations or formal processes for monitoring (for example, one SAI found an assessment of a low-risk project) ▪ Lack of compliance ▪ Weaknesses in the audit entity's regulatory process ▪ Lack of lessons learned from follow-up and monitoring

Audits highlighted problems ranging from lack of procedures to poor coordination among federal agencies responsible for EIAs. However, the common thread is the lack of strong administrative and procedural frameworks. Rationale for the identification of projects to undergo EIAs was unclear. Without such a basis, there is a risk that a high-impact project might not be captured for EIA while low environmental risk activities are conducted. This situation was reported by the Costa Rican SAI. Low quality of EIAs is equally harmful to the environment because projects may be approved based on a poor assessment of consequences, or important environmental components or impacts may not be identified. SAIs all found that monitoring was lacking or was insufficient. The findings from SAIs, coupled with information from the EIA literature, show that monitoring and follow-up to ensure that mitigation measures have been adequately implemented are significant weaknesses. Without monitoring, mitigation measures cannot be evaluated for their effectiveness in preventing damage to the environment.

All of these deficiencies have the potential to negatively impact and weaken EIA, which ultimately undermine important aspects of sustainable development, such as full and meaningful public participation. Maintaining and protecting socio-ecological integrity through proper impact management is only beneficial if monitoring and follow-up of such measures are included. With regard to these findings, we see that EIA quality is essential to promoting sustainable development.

The following is an example of a gap in enforcement reported by the SAI of Australia. Approval was given for the dredging of a river in a wetland of international significance that housed threatened and migratory species. The conditions of approval included the submission of a compensatory habitat plan and its endorsement by the entity before the last stage of the project began. Annual compliance reports were to be submitted. The audit found that dredging had started although the compensatory habitat plan had not been submitted by the proponent and approved by the entity. The compliance reports were also overdue. The department was aware of the noncompliance but had not acted by referring the matters to its compliance section.

5.3 CHALLENGES IN AUDITING EIA

Of the eleven¹ countries that have conducted EIA audits, nine outlined the challenges they faced during the audit process and provided examples of tools and potential solutions to deal with the challenges they were facing (Figure 9). These challenges have been summarized into the five following areas.

1 Australia, Brazil, Canada, China, Costa Rica, Kuwait, Poland, South Korea, Uganda, United States, and Zimbabwe.

Technical Expertise

SAIs highlighted a lack of in-house technical expertise. Lack of technical expertise reflects the fact that environmental impact assessment is a technical and interdisciplinary field that requires knowledge and a certain mastery of its functions and processes. Most SAIs resolved this issue by subcontracting this technical expertise to guide the audit.

Audit Approach

SAIs mentioned that the diversity in the size and type of EIA projects posed challenges for defining audit criteria and for audit approach. Acknowledging this challenge, some SAIs described sampling approaches taken to overcome it. For example, case studies were selected for the largest and most complex projects, while a limited random sample was applied for less complex projects and a sampling approach was selected for common types of environmental assessments. Another SAI used purposive (or directed) sampling to identify cases where there was significant public outcry and used random sampling for the other types. Another SAI structured its sample based on project developments (key activities) and compliance activities (industries). Samples can be selected according to the size and type of projects that also allow for greater scrutiny of projects that are large and complex. One SAI recommended to the entity to develop clearer standards and guidelines to make the process more systematic.

Documentation Challenges

Documentation was also indicated as a challenge by SAIs, sometimes due to the considerable amount of files involved for review, while other times, documentation availability and quality hindered the EIA process. File review can form an integral part of an audit but may quickly become overwhelming, especially in the field of environmental impact assessment. EIA reports and associated documentation tend to be voluminous and often require extensive human resources to complete. SAIs tried to overcome this by, for example, ensuring sufficient resources were available to review files and developing standard templates to review files. In many countries, documentation may not be of sufficient quality, so other methods can be used, such as focusing on systems and practices rather than conducting a file review.

Policy Limitations

There are 191 countries out of 193 United Nations Environment Programme member countries that have instituted some forms of EIA regulation either through legislation or as part of an international convention (Morgan 2012). Nine of 11 SAI respondents that undertook EIA audits relied on their country

legislation as criteria. SAIs identified policy limitations as a challenge because of the difficulty in interpreting EIA legislation and/or of sometimes unclear ministerial guidelines. Given this, legal advice might often be needed for guidance during the audit and should be factored in to the audit’s resource planning to ensure that EIA policy is understood.

Accessing Relevant Information

Some SAIs cited entity reluctance to provide information as a major obstacle. One SAI sensitized the entity by providing more information about the audit process while the other SAI had to engage the parent ministry in order to garner information necessary for the audit. Entities may not have experience or knowledge of auditing and there may be certain misconceptions about auditing that will hinder the process. As well, environmental impact assessment exists within a politicized environment, which may drive projects to be approved without the necessary EIA. SAIs that encountered these issues dealt with them by ensuring the entity understands the legislation that gives the auditors their authority and the overall process and value of auditing. If these avenues do not work, elevating the issue to more senior levels of authority at the entity is one option to elicit cooperation.

Figure 9 Summary of Challenges in Undertaking EIA Audits

Challenges	How SAIs dealt with challenges
Lack of in-house environmental expertise	<ul style="list-style-type: none"> ▪ Hired environmental experts to guide the audit
Diversity in project size and type—challenges for defining audit approach and criteria	<ul style="list-style-type: none"> ▪ Selected case studies for largest and most complex projects and those projects with highest public outcry ▪ Used limited random sample for less complex projects ▪ Used random sampling for more projects
Documentation, either voluminous amounts of documents or documentation of low quality	<ul style="list-style-type: none"> ▪ Taken into account during the audit planning process and thus sufficient resources were allocated ▪ Focused on systems and practices as opposed to document review ▪ Developed standard template to apply to file review
Policy limitations such as difficulty interpreting EIA legislation and unclear ministerial guidelines	<ul style="list-style-type: none"> ▪ Sought legal advice ▪ Provided recommendation to entity to revise guidelines and regulations
Entity reluctance to provide information	<ul style="list-style-type: none"> ▪ Did entity sensitization ▪ Engaged parent ministry to obtain information

5.4 CRITERIA FOR AUDITING EIA

The most authoritative sources of criteria are official standards such as legislation, decisions, and policies taken by the legislature or the executive branch. Criteria may also stem from:

- best practices, sound principles, and professional standards;
- performance indicators as established by the audited entity or government;
- expert advice; and
- subject matter literature. For example, if the audit is assessing the performance of scientific activities, the more authoritative sources would be scientific literature and scientific expertise.

Criteria from Legislation

Environmental impact assessment is included in institutional and legal frameworks in most countries around the world. Legislation such as laws, regulations, and statutes (Exhibit 10) are the prominent criteria used by most SAIs that undertook EIA audits. Most countries have established legislation governing EIA from which criteria can flow. Appendix 6 provides examples of EIA legislation and policies in various countries.

Entity documentation (such as directives and programs) is also an important source from which auditors can draw criteria to measure entity performance. Central agencies may also set policies and directives that can influence EIA. For example, the Management Accountability Framework from Canada’s central Treasury Board of Canada Secretariat was used as a source of criteria with regard to an entity’s public participation processes. Some countries have successfully institutionalized EIA, while others still struggle.

Figure 10 Examples of EIA Legislation and Policy

Regions	Examples
Europe	Member states of the European Union are subject to the EIA directive (85/337/EEC), which applies to a wide range of private and public projects (European Commission 2015 b). Annex I of the directive lists projects for which EIA is mandatory while Annex II lists projects for which national authorities can decide on the need for an EIA (European Commission 2015 b). For example, in its response to the survey, Cyprus stated that as a member state, it had to comply with the EIA directive and had integrated it with its own national legislation, as most EU countries have done. Therefore, across the EU, EIA has been harmonized in accordance with this directive, which has established minimum requirements that include the best practices described above, such as screening, scoping, and provisions for public participation but more generally for an EIA to contribute to a high level of protection of the environment and human health.

Regions	Examples
Africa	In a 2002 report reviewing the application of EIA in African countries, the Economic Commission for Africa found that 18 out of 23 countries had enabling legislation or specific legislation or regulations in place. Countries such as Ghana, Tunisia, South Africa, and Uganda were recognized as having good systems in place. For example, Ghana's Environmental Protection Agency Act, 1994 established the legal basis for environmental impact assessment. The Environmental Assessment Regulations 1999 included provisions for the aspects of an effective EIA: screening, scoping and terms of reference, public notifications, review of the environmental impact assessment report, a decisionmaking period that includes public hearings, an environmental management plan, monitoring, and noncompliance penalties. While Ghana has a robust process in place, this is not necessarily the case across the continent, as only 10 out of 18 African countries with enabling EIA legislation had explicit provisions for public participation. Some countries do not have a legislative or institutional framework.
Latin America	The majority of Latin American countries have adopted formal EIA requirements and EIA is seen as the foremost environmental management and planning tool. Provisions for public participation are integrated in EIA legislation; however, provisions for alternatives analysis is lacking for several countries (such as Argentina, Chile, and Guatemala). While the United States, Canada, and other developed nations intend that EIA is a tool for sustainability (integrating stakeholder concerns for the environment and society into decision making), Latin America's approach tends to focus more on EIA as a management tool to manage project impacts rather than as the basis for decision making.

Criteria from International Agreements and Conventions

Criteria to audit EIA can also be drawn from international agreements and conventions, which often propose guidelines and recommend best practices to their members. There are a handful of international conventions that refer to environmental impact assessment:

- Aarhus Convention: UNECE Convention on Access to Information, Public Participation in Decisionmaking and Access to Justice in Environmental Matters
- Espoo Convention: Convention on Environmental Impact Assessment in a Transboundary Context
- Convention on Biological Diversity (CBD)
- Ramsar Convention: Convention on Wetlands

The Espoo and Aarhus Conventions are specific to the European Union, while the Ramsar Convention and the CBD have been ratified by most countries worldwide. The EU's EIA directive was amended to align with both the Espoo and Aarhus Conventions; the former to ensure that the directive's provisions on public participation were consistent with that of the convention and the latter to widen the scope of the EIA directive with regard to types of projects covered, procedures, and information requirements.

The Convention on Biological Diversity represents an international recognition of biological diversity as a global asset of tremendous value to present and future generations. Contracting parties of the CBD are required, by the Convention's Article 14, to implement EIA processes for projects that may affect biological diversity as well as ensuring that biodiversity concerns are integrated into strategic environmental assessment. Guidelines have been developed for incorporating biodiversity-related issues into environmental impact assessment as well as for the conduct of cultural, environmental, and social impact assessment regarding projects likely to affect spaces used by and sacred to indigenous and local communities. These guidelines were developed to support fulsome and meaningful participation of indigenous and local communities.

The Ramsar Convention, to which 160 nations have joined as contracting parties, is an intergovernmental treaty for the "conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world." Resolution VII.16 from the 7th Meeting of the Conference of the Contracting Parties to the Convention on Wetlands in 1999 calls upon contracting parties to apply "rigorous impact assessment procedures" and "to formalise such procedures under policy, legal, institutional and organizational arrangements." This resolution on impact assessment further stipulates measures to ensure the following.

- All valuable environmental, social, and economic elements are integrated into decision making, particularly those in relation to wetlands.
- There is transparency and participation of local stakeholders.
- There are robust monitoring programs.
- There is cooperation with neighbouring countries. (Ramsar 2010)

Criteria from Requirements of Financial Institutions

In addition to country-specific legislation governing the EIA process, international donor agencies and financial institutions have adopted EIA policies to which they hold their beneficiaries accountable. Beneficiaries are most often developing nations. While their country-specific legislation may be lacking important aspects of EIA, such as public participation, such policies can be essential in fulfilling the legislative and policy voids for EIA. EIA requirements are applied by all development banks and many international aid agencies.

World Bank safeguard policies

The World Bank group developed safeguard policies, including environmental and social assessment procedures, to guide funding decisions on major projects in developing countries. These safeguards require borrowing governments to address certain environmental and social risks in order to receive bank financing for development projects. One of those requirements is to conduct an environmental and social impact assessment. World Bank safeguards are widely seen as an effective way to ensure that environmental and social concerns are represented in the design and implementation of projects.

International Finance Corporation Performance Standards

When the International Finance Corporation (IFC), part of the World Bank group, adopted the Policy and Performance Standards on Social and Environmental Sustainability and Disclosure Policy (Sustainability Framework) in 2006, it marked a shift in the way in which IFC addresses environmental and social risks. The Performance Standards require client companies to engage with host communities early, to build constructive relationships, and to maintain them over time. The IFC Performance Standards have become the global benchmark for corporate social responsibility and sustainability in project financing. While the IFC Performance Standards originated from projects financed by the World Bank, they are now used by all financial institutions around the globe that have signed up to the Equator Principles (see the paragraph below), accounting for a substantial proportion of global project finance.

Equator Principles financial institutions

The IFC met with several major banks in 2002 and initiated discussions that led to the launch in June 2003 of the Equator Principles, which provide guidelines on the use of EIA for major project funding decisions by the institutions. The Equator Principles are based on the social and environmental performance standards developed by the IFC, and the environment, health, and safety guidelines of the World Bank. Central to these principles is EIA. In essence, for major projects above a certain funding threshold (currently US\$10 million), Equator Principles financial institutions must ensure that the applicant provides an impact assessment appropriate to the project's scale and nature.

Environmental and social assessment procedures

OECD countries agreed to adopt environmental and social assessment procedures in relation to export credit lending by the member countries, much of which is linked to major projects in developing countries. The latest version of the procedures, adopted in 2007 and revised in 2012, are very similar to the Equator Principles in content and intention. These initiatives are important because they increase the proportion of major development projects being subject to EIA and related assessments.

Other Sources of Criteria

There are other valuable sources of criteria in addition to the above-mentioned sources.

Best practices

The Principles of Environmental Impact Assessment Best Practice, as promoted by the International Association for Impact Assessment, provide operating principles (such as describing the various EIA stages) as well as the principles that guide its implementation (such as transparency, rigour, and purpose).

Scientific and technical expertise and advice

Given that EIA governs the implementation of complex and technical projects, auditing EIA may involve verifying these aspects. Access to scientific and technical expertise is important to an SAI in understanding certain topics and developing criteria to support audit work and findings. Technical advice based on international reports and documentation may also be a good source of criteria.

Entity's various documentation and reports

The entity being audited can be measured against its own documentation. For example, because the EIA process is closely related to planning procedures, compliance with the planning procedures (developed by the entity) could be one source of audit criteria. Another example would be the obligations listed in an EIA report, which can serve as criteria against which to audit the entity's performance. Permits, licences, and entity technical guidance and operating manuals can be used in the same way. Entity budget plans and internal audit and evaluation reports are also authoritative criteria sources because these are commitments taken by the entity.

INTOSAI guides

The Working Group on Environmental Auditing (WGEA) of the International Organization of Supreme Audit Institutions (INTOSAI) has produced various studies, guidelines, and International Standards of Supreme Audit Institutions (ISSAI) guides related to environmental auditing. These guides cover an extensive list of topics, such as water, forests, mining, fisheries, energy, biodiversity, and waste management. Those guides can help when selecting audit criteria, providing tips and ways in which audit tools can contribute to successful audits.

Chapter 6

Conclusion

Environmental assessments are important to protect environmental quality; for example, to prevent pollution and conserve habitat and biodiversity. Identifying the potential environmental effects of a project before it proceeds is critical to anticipating, preventing, and reducing environmental damages. Environmental impact assessment (EIA) requires the consideration of environmental factors in planning and decision making. Effective, timely, and meaningful public consultation can help ensure that public concerns and values are considered during the environmental assessment process.

Environmental impact assessment has been a commitment made by many countries. This research paper has outlined various issues in the implementation of EIA and highlighted challenges auditors face when conducting an audit on this topic. Determining audit objectives and relevant criteria becomes even more important to examine areas that carry the higher risks.

The three-dimensional framework of an effective EIA (Exhibit 6) is a good start to help determine aspects of EIA most at risk for poor performance and hence, poor sustainability outcomes. Controls, procedures, and processes—such as the robustness of administrative structures that guide the EIA process or the existence of sufficient regulatory processes to implement and monitor impact mitigation measures—are areas to consider when determining audit objectives. As presented, there are numerous sources of criteria, the strongest being legislative requirements and obligations.

Appendices

APPENDIX 1 EVOLUTION OF EIA WORLDWIDE

Year	Country or organization	EIA legislation, policy, or directives
1969	United States	<i>National Environmental Policy Act</i>
1971	United States (California)	<i>California Environmental Quality Act</i>
1974	OECD	The Organisation for Economic Co-operation and Development (OECD) issued recommendations on EIA to its constituent States
1974	Australia	<i>Environment Protection (Impact of Proposals) Act, Commonwealth of Australia</i>
1975	Philippines	Presidential Decree (PD) 1151 Philippine Environmental Policy
1975	Thailand	<i>Improvement and Conservation of National Environmental Quality Act, amended in 1978</i>
1975	West Germany	Cabinet Resolution
1976	France	<i>Loi relative à la protection de la Nature</i>
1978	Philippines	Presidential Decree (PD) 1586 Establishing an Environmental Impact Statement System
1979	China	<i>Environmental Protection Law</i>

Year	Country or organization	EIA legislation, policy, or directives
1980	UNEP	United Nations Environment Programme provided guidance on EIA of the development proposals
1980	Sri Lanka	<i>National Environmental Act, amended in 1986</i>
1984	Canada	Federal Environmental Assessment and Review Process Guidelines Order
1985	European Community	European Community issued a directive making environmental assessments mandatory for certain categories of projects
1986	OECD	The Organisation for Economic Co-operation and Development (OECD) issued recommendations on EIA for its development aid projects
1986	India	Notifications dated May 5, 1994 under the <i>Environment (Protection) Act</i>
1986	Western Australia	<i>Environmental Protection Act</i>
1987	World Bank	EIA became an integral part of World Bank policy
1987	WCED	EIA emphasized by World Commission on Environment and Development (the Brundtland Commission), which introduced concept of sustainable development
1987	Malaysia	Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order
1990	Asian Development Bank	Asian Development Bank published guidelines for EIA
1991	UNECE	United Nations Economic Commission for Europe (UNECE) adopted Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention)
1991	New Zealand	<i>Resource Management Act</i>
1992	United Nations Conference on Environment and Development (Earth Summit)	International consolidation and acknowledgement of environmental impact assessment as a universal approach to inform and influence decision making on crucial socio-environmental matters
1994	Vietnam	<i>Law on Environmental Protection</i>
1995	Bangladesh	No specific EIA legislation; however, there was a Declaration that EIAs should be carried out for all major development projects
2001	European Commission	The European Commission issued Strategic Environment Assessment (SEA) Directive
2008	OECD	The OECD members adopted the Policy Statement on SEA

APPENDIX 2 EXAMPLE OF AN ENVIRONMENTAL IMPACT MATRIX FOR A DEVELOPMENT PROJECT

The diagram below provides an example of an impact analysis matrix used in determining the impacts of a project. This diagram shows in the top row the components of the development project and the first column shows environmental components that might be affected where the project is taking place. These kinds of matrices are often used to determine potential impact of projects on various environmental components.

		Issues arising from the development							
		Traffic	Waste	Workforce	Site vehicles	Site machinery	Raw materials	Landscaping	Temporary buildings or cabins
Environmental and socio-economic factors	Flora								
	Fauna								
	Water		Develop a scoring system, for example: 0 = no impact 1 = low impact 2 = moderate impact 3 = high impact Spilt values can be assigned, and some more important factors could be weighted (e.g. score doubled) to increase validity. Totals can then be calculated for each factor.						
	Microclimate								
	Aesthetic appeal								
	Noise								
	Air quality								
	Local residents								
	Local businesses								
	Local landowners								

Source: Royal Geographical Society, retrieved from <http://www.rgs.org/OurWork/Schools/Fieldwork+and+local+learning/Fieldwork+techniques/Human+impact+studies.htm>.

APPENDIX 3 SAMPLE CONDITIONS OF APPROVAL (CANADA)

Uranium Exploration Project—Conditions of Approval	
Condition 1	Given the importance to locate the effluent in a water body or a stream where the environmental and social effects will be minimal, the final choice for its location and its development should be made according to the results of the additional environmental characterization program. Moreover, the proponent will ensure that there is no drinking water intake in the water body where the effluents are discharged.
Condition 2	Given the lack [of] hydrological information available for Stream 4–6 area (reference: Hydrological analysis—low flow. Stream 4–6) and considering the proponent’s intention to vary the volume of water released according to the stream’s low flow, the proponent will have to include flow measurements in the surface water characterization program proposed for this area (reference: Program for additional baseline dated collection—Table 3, page 13 of 17).
Condition 3	<p>The proponent must add the following components to its environmental characterization and monitoring program:</p> <p>Mercury content: In order to verify the predictions of the risk analysis, which concludes that the project activities would not increase the levels of mercury in fish, it is recommended that the proponent monitor predator species consumed regionally (e.g., pickerel, northern pike, etc.), which would likely have higher levels of mercury than minnows.</p> <p>Fish sampling: If Lake 6 were the effluent receptor lake (first lake downstream from Stream 4–6), the proponent will include this lake in the sampling campaigns under the environmental monitoring program.</p> <p>Reference data on terrestrial vegetation: In order to confirm the hypothesis that the risk of exposure for plants and wildlife is low, the proponent will include characterization of fruit and leaves of a plant species that is consumed (e.g., blueberries), to supplement the characterization of the lichen already proposed.</p>
Condition 4	<p>The proponent must review, in accordance with advice from Environment Canada (reference: Environment Canada. Matoush Underground Exploration Project—Comments from Environment Canada. February 2, 2010), its risk analysis as well as possible accident scenarios and the description of the impacts on the environment and the population, while focusing on the following components:</p> <p>determination of distances involved in accident scenarios involving propane (BLEVE, hose or pump leakage, taking into consideration time required to stop a leak, the extent of the spill, and other issues);</p> <p>presence of a foam extinguishing system in the event of fuel fire in catch basins;</p> <p>installation of gas detectors to detect gas leaks;</p> <p>installation of a surveillance camera to ensure prompt response in the event of a spill or leak;</p> <p>there is currently no indication that high level gauges will be installed in the tanks to prevent overfilling (more than one high level alarm gauge will be needed per tank, specifically a high level alarm gauge and a very high level alarm gauge, some even recommend a third gauge);</p> <p>nor is there any indication that the propane tanks will be relocated to prevent the dispersion of propane in the ramp and minimize the risk of fire or explosions.</p>

Uranium Exploration Project—Conditions of Approval

Condition 5	The proponent shall include in the emergency measures plan a detailed response plan in case of forest fire, specifically to cover the evacuation of onsite personnel, as the site is located in a limited protection zone and the Société de protection des forêts contre le feu only responds selectively.
Condition 6	The proponent must meet with regional stakeholders to ensure that the emergency measures plan is coordinated with local stakeholders and that shared responsibilities are clearly established so that the local authorities are in a position to ensure the health and well-being of the local population.

Source: Canadian Environmental Assessment Agency website: <https://www.ceaa-acee.gc.ca>.

APPENDIX 4 SURVEY ON IMPLEMENTATION OF EIA

Questionnaire Sent to SAIs

The following is the questionnaire that was sent to WGEA members as part of this research project.

The SAIs of Canada and India are co-leads of the Environmental Impact Assessment (EIA) Research Project, whose preliminary results will be presented at the next WGEA Meeting on September 2015. As part of the 2014–2016 work plan for the INTOSAI Working Group on Environmental Auditing, a commitment was made to prepare a research paper on Environmental Assessment.

The objective of the research paper is to provide SAIs with a general understanding as to what is an EIA, the overall process by which they are conducted, the international commitments that address it, how it is evolving internationally, what are the challenges in implementing it and why it is important to the auditing community.

To complete our work, we would like your assistance in answering a few questions related to the implementation of environmental impact assessment in your country. A number of observations have been identified below, but please feel free to identify your own issues. The observations do not need to be ranked. Respondents can select multiple responses for each question and can provide additional explanation where appropriate at the end of the questionnaire (referring to the relevant question).

1. In relation to the **legal adoption of environmental impact assessments** in your country, is it mandated by national legislation and/or by directives?
 Yes No Do not know
2. What are the potential problems associated with **EIA legislation** in your country?
 absent legislation (no EIA legislation)

- deficient legislation (there is legislation but there are gaps in it)
 - conflicting legislation (e.g. between national level and sub-national level or between different sectors)
 - _____ (Other)
3. In relation to the **EIA institutional framework/organizational governance** in your country, what are the potential problems?
- unclear/overlapping responsibilities
 - insufficient regulatory framework
 - insufficient coordination between different sectors or the government
 - inadequate provision of funds for governmental agencies responsible for evaluating environmental impact assessments
 - no potential problems/gaps in the institutional framework
 - _____ (Other)
4. In relation to the **EIA decisionmaking capacity**, what are the potential problems?
- lack of environmental data for decision making
 - lack of transparency in decision making and planning
 - lack of analysis (economic, social, environmental) supporting decisions
 - lack of participation from affected publics and general public in the decisionmaking process
 - _____ (Other)
5. In relation to the **EIA process**, what are the potential problems?
- lack of rigor/quality/expertise
 - lack of objectivity/impartiality
 - lack of description of projects (See diagram on Page 4)
 - lack of description of environment in which the project is taking place
(See diagram on Page 4)
 - lack of monitoring, follow-up and verification
 - lack of effective public consultation
 - lack of baseline data
 - _____ (Other)

6. In relation to the **EIA report**, what are the potential problems?
- lack of proposed alternatives and their analysis
 - deficient or insufficient methodologies and techniques used to identify and predict environmental impacts
 - deficient analysis of the interrelationships/integration of social, economic and biophysical aspects
 - deficient mitigation measures to avoid, minimize or offset predicted adverse impacts (mitigation measures are not enough or they are not good enough in terms of quality)
 - lack of follow-up
 - lack of analysis of cumulative impacts (effects of the addition of environmental impacts stemming from multiple projects in the region or multiple projects over a course of time)
 - _____ (Other)
7. In relation to the **EIA compliance**, what are the potential problems?
- regulators not applying the environmental legislation properly
 - proponents not complying with EIA requirements/conditions
 - significant delays of compliance with EIA requirements (causing additional impacts)
 - _____ (Other)
8. In relation to the **EIA evaluation/follow up**, what are the potential problems?
- insufficient evaluation of environmental impacts of projects
 - deficient measures of the impacted components
 - deficient monitoring and reporting systems
 - _____ (Other)
9. In relation to the **EIA accountability**, what are the potential problems?
- no enforcement mechanism
 - lack of transparency
 - lack of data
 - lack of measures to ensure public participation
 - _____ (Other)

10. Describe any other potential problem or key issue associated with EIA in your country.

Summary of Survey Results

20 SAIs have answered the questionnaire: Bhutan, Botswana, Brazil, China, Czech Republic, Estonia, European Court of Audits, India, Indonesia, Lesotho, Lithuania, New Zealand, Nigeria, the Philippines, Poland, South Africa, Tanzania, Timor-Leste, Uganda, and the United States.

- The SAIs have identified 15 top issues relating to EIA implementation:
- Deficient monitoring and reporting systems—cited by 79% of respondents
- Lack of monitoring, follow-up, and verification—74%
- Lack of follow-up—74%
- Insufficient evaluation of environmental impacts of projects—73%
- Proponents not complying with EIA requirements/conditions—68%
- Lack of coordination between different sectors or governments—68%
- Lack of data—63%
- Lack of analysis (economic, social, environmental) supporting decisions—58%
- Lack of environmental data for decision making—58%
- Deficient analysis of the interrelationships/integration of social, economic, and biophysical aspects—58%
- Lack of baseline data—58%
- Lack of participation from affected publics and general public in the decisionmaking process—53%
- Unclear/overlapping of responsibilities—53%
- No enforcement mechanism—52%
- Deficient legislation—47%

Overall Survey Results

The following lists all of the issues identified by SAIs, as a result of the survey (including the 15 top issues):

Legal adoption of EIA by national legislation and/or by directives

- Yes—cited by 100% of respondents

EIA legislation

- Deficient legislation—47%
- Conflicting legislation—26%
- Other: Low implementation of the legislation (SAIs European Court of Audits, Lesotho)

EIA institutional framework/organizational governance

- Lack of coordination between different sectors or governments—68%
- Unclear/overlapping of responsibilities—53%
- Inadequate provision of funds for governmental agencies—37%
- Insufficient regulatory framework—21%
- No potential problems/gaps in the institutional framework—11%
- Other: Shortage of human resources (SAI Bhutan)

EIA decisionmaking capacity

- Lack of environmental data for decision making—58%
- Lack of analysis (economic, social, environmental) supporting decisions—58%
- Lack of participation from affected publics and general public in the decisionmaking process—53%
- Lack of transparency in decision making and planning—42%
- Other: Large participation of the public whose interest is not to protect nature, but rather an effort to put pressure on investors (SAI Czech Republic); lack of EIA expertise by decision makers (SAI South Africa)

EIA process

- Lack of monitoring, follow-up, and verification—74%
- Lack of baseline data—58%
- Lack of effective public consultation—47%
- Lack of rigour/quality/expertise—47%
- Lack of objectivity/impartiality—26%
- Lack of description of environment in which the project is taking place—16%
- Lack of description of projects—11%

EIA report

- Lack of follow-up—74%
- Deficient analysis of the interrelationships/integration of social, economic, and biophysical aspects—58%
- Lack of analysis of cumulative impacts—47%
- Lack of proposed alternatives and their analysis—42%
- Deficient or insufficient methodologies and techniques used to identify and predict environmental impacts—42%
- Deficient mitigation measures to avoid, minimize, or offset predicted adverse impacts (mitigation measures are not enough or they are not good enough in terms of quality)—42%

EIA compliance

- Proponents not complying with EIA requirements/conditions—68%
- Significant delays of compliance with EIA requirements (causing additional impacts)—42%
- Regulators not applying the environmental legislation properly—32%
- Other: Unclear and/or indefinite requirements in EIA legislation (SAI Estonia)

EIA evaluation/follow-up

- Deficient monitoring and reporting systems—79%
- Insufficient evaluation of environmental impacts of projects—73%
- Deficient measures of the impacted components—42%

EIA accountability

- Lack of data—63%
- No enforcement mechanism—52%
- Lack of measures to ensure public participation—42%
- Lack of transparency—32%
- Other: Responsibilities of different agencies conducting EIA and reporting the results are not clearly established and coordinated (SAI Philippines)

Other

- Lack of resources (SAI Bhutan)
- No proper coordination among different agencies (SAI Bhutan)
- Lack of environmental education (SAIs Botswana, Poland, United States)

- Lack of public awareness on the importance of EIA (SAIs Botswana, Poland, United States)
- Lack of competence within governmental agencies responsible for monitoring and verification of EIA process and reports (SAIs Estonia, Bhutan)
- Lack of monitoring data that would allow an assessment of the quality of EIA process and experts and also effectiveness of mitigation measures (SAI Estonia)
- Local governments have been given greater responsibility of verification of EIA process in the circumstances where they don't have enough competence and resources (SAI Estonia)
- No major problems, the regime is well established and works well. Lack of public participation with more centralized decision (SAI New Zealand)
- Insufficient government efforts to conduct EIA, insufficient key performance indicators for conducting EIA, and lack of expertise on conducting EIA (SAI Philippines)
- Inadequate involvement of other stakeholders in the EIA process (SAI Tanzania)
- Use of money collected from EIA fees for other activities not related to assessment of proposed projects prior to approval or monitoring of project impacts (SAI Uganda)
- No transparent, objective, and measurable criteria been set for approving/disapproving a project (SAI India)
- No process is available to assess cumulative impacts of the proposed project on the geographical area (in terms of biodiversity impacts, pollution impacts, social impacts, and so on) (SAI India)
- No mechanism to assess effectiveness of environmental impact of the project after it has been set up (SAI India)
- No quality assurance of the EIA process; for example, no adequate and timely documentation, no mechanism to check data accuracy, lack of periodic review of the EIA system, lack of measures to check quality of agencies preparing the EIA report, lack of measures to control conflict of interest among the various authorities/agencies, lack of measures to assure independence and technical suitability of members of appraisal committee (SAI India)
- Ineffectiveness of post-project compliance: issues such as no clear demarcation of authority/responsibility for compliance, no general standards to determine project compliance with the mitigation measures or standards and related conditions of consent, no processes for informing staff and decision makers of the relative success of mitigation measures and using those results to improve future mitigation measures (SAI India)

- No clear measurable environmental conditions on project approval, which have to be met by project proponent and can be measured transparently and accurately. Also, framing of conditions done to assure implementation (no multiple conditions within one condition; vague, nonmeasurable conditions; conditions not possible to comply with; modifications of conditions to ensure compliance; no deterrence for noncompliance, no process to link environmental damage with noncompliance of conditions and taking action) (SAI India)
- Lack of effectiveness of the EIA process: screening and scoping exercises not well-defined and do not allow for instances like allowing proponent to split the project, insufficiency and inadequacy of baseline data for assessment of project's environmental impacts, no establishment of important standards like effluent standards, total pollution load/carrying capacity not considered, infeasible treatment, no well-defined standards (for example, for reuse of treated wastewater), no integrated decision making (SAI India)

APPENDIX 5 SURVEY ON AUDITING EIA

A survey was developed by the WGEA steering committee to gain insight into members' audit experiences as well as their needs. One section of the survey was dedicated to environmental impact assessment to gauge members' experience in auditing EIA, to seek lessons learned, and to better understand challenges experienced by SAIs in undertaking EIA audits. Survey questions included:

1. Provide some examples of how your SAI has conducted EIA auditing and cases where lessons were learned.
2. Describe the challenges your SAI faced while auditing EIA and how your SAI has addressed them.
3. What sources of criteria have your SAI used, for example, did your SAI use international agreements or accords, etc.?

The survey was sent to 56 countries. Forty-seven countries responded to the survey. Twentynine countries responded that they had not conducted performance audits on environmental impact assessment. Sixteen countries responded that they had undertaken environmental impact assessment audits. However, five of those countries did not seem to understand the question; for example, one country simply explained the environmental impact assessment process in their country. Two countries were in the process of conducting their first EIA audit and therefore could not provide substantive responses.

Eleven countries have conducted EIA audits: Australia, Brazil, Canada, China, Costa Rica, Kuwait, Poland, South Korea, Uganda, United States, and Zimbabwe. Of those, nine provided us the

challenges they faced during the audit process, while the remaining two did not provide any response.

Summary of Survey Results

Challenges of auditing EIA

Of the nine SAIs that provided challenges they face during the EIA auditing process, five highlighted a lack of in-house technical expertise due to the interdisciplinary nature of EIA. The SAIs thus hired environmental experts to guide the audit. Four SAIs mentioned that the diversity in the size and type of EIA projects posed challenges for defining audit criteria and for sample selection. With regard to this challenge, the SAI that had difficulty in defining audit criteria due to the EIA procedures differing in accordance with the project type and size was unable to surmount this challenge. However, recommendations the SAI made to the entity suggested that it developed more systematic standards and guidelines. The other SAIs acknowledging this challenge described the sampling approaches taken to overcome it. One SAI stated that case studies were selected for the largest and most complex projects, and a limited random sample for less complex projects and a sampling approach was selected for common types of environmental assessments. Another SAI stated that purposive sampling was used to identify cases where there was significant public outcry and used random sampling for the others. The third SAI stated that a structured sample of developments and compliance activities was taken. This included key activity types and industries. The analysis of the sample entailed an extensive quantitative undertaking.

Three SAIs indicated that they had documentation challenges. One SAI highlighted limitations due to the considerable amounts of files for review while another stated that documentation availability and quality hindered the EIA process. The first SAI had to spend considerable resources to review the files while the second SAI focused on systems and practices to avoid data limitations, implemented a quality assurance program in the audit, and developed a standard template to apply to the file review.

Two SAIs mentioned policy limitations, where one SAI encountered difficulty in interpreting EIA legislation while the other found the ministerial guidelines unclear. The first SAI sought legal advice for guidance during the audit while the second SAI found that developers had not followed EIA guidelines and thus it recommended to the entity to revise its guidelines and regulations.

Two SAIs described entity reluctance to provide information as major obstacles. One SAI sensitized the entity by providing more information about the audit process while the other SAI had to engage the parent ministry in order to garner information.

Table 5.1 summarizes these challenges in auditing EIA cited by respondents.

Table 5.1 Challenges in Auditing EIA Provided by SAIs

SAI respondents	Diversity in projects causes issues for sampling and criteria	Considerable resources (files to go through)—quality limitations and lack of information	Lack of inhouse expertise	Complexity of EIA legislation—ministerial guidelines unclear	Entity reluctance to provide information
Australia	1	1			
Brazil	1		1		
Canada	1	1		1	
China			1		
Costa Rica			1		
Kuwait		1	1		
Poland*					
South Korea				1	
Uganda	1				1
United States*					
Zimbabwe			1		1
Total	4	3	5	2	2

*Did not provide any challenges.

Main findings of EIA audits

Of the 11 countries that stated they had undertaken performance audits on environmental impact assessment, only 7 provided information on the findings of their reports. Five SAIs stated that they found a lack of implementation, evaluation, and monitoring of mitigation measures for EIA projects. Three SAIs stated that the identification of environmental impact was not completed comprehensively, resulting in the neglect of certain environmental components. Two SAIs stated that the preparation of a good-quality EIA report was lacking, where one SAI attributed this to the lack of formal methodologies and criteria for producing an EIA report. Two SAIs found compliance to be an issue, where one SAI found that the EIA legislation had not been fully adhered to while another found that the assessment guidelines had not been observed. One SAI found public consultation to be deficient, another found there to be no regulations for certain processes, such as monitoring, and another SAI revealed weaknesses in the audit entity’s regulatory process.

Table 5.2 summarizes the main findings provided by SAI EIA audits grouped into themes.

Table 5.2 Main Findings Provided by SAI EIA Audits

SAI respondents	Lack of follow-up/ implementation and evaluation and monitoring mitigation measures	Weakness in regulatory process	Good-quality EIA preparation an issue	All impacts not identified	Insufficient public consultation	Policy gaps (no regulations for certain processes)	Lack of compliance	Assessing low-risk projects
Australia		1						
Brazil	1		1					
Canada	1			1	1			
China	1		1					
Costa Rica	1			1		1		1
Kuwait*								
Poland*								
South Korea	1						1	
Uganda*								
United States				1			1	
Zimbabwe*								
Total	5	1	2	3	1	1	2	1

*Did not provide any findings.
Sources of EIA audit criteria

Nine of the 11 SAIs that responded indicated that their country’s legislation was their source of criteria. One did not respond while another relied solely on its audit office’s generic criteria developed for auditing regulatory compliance. Three SAIs used the audited entity’s own documentation as a source of criteria, such as internal bylaws and entity regulations, entity operating manuals, and entity annual budgets. Three SAIs stated that they relied on international best practices, such as criteria taken from United Nations Environment Programme technical reports and other international conventions. One SAI used an entity approved environmental impact assessment report as a source of criteria.

Table 5.3 summarizes the main sources for audit criteria for auditing EIA provided by respondent SAIs.

Table 5.3 Sources for Audit Criteria for Auditing EIA Provided by SAIs

Respondent SAIs	Sources of audit criteria provided
Australia	Generic criteria developed by the Australian National Audit Office for auditing regulatory compliance, adjusted for the particulars of the program examined.
Brazil	<ul style="list-style-type: none"> ▪ Brazilian EIA legislation ▪ Environmental licences (permits) ▪ Internal bylaws and regulations by IBAMA (Institute of Environment and Renewable Natural Resources) ▪ International good practices
Canada	<ul style="list-style-type: none"> ▪ Canadian Environmental Assessment Act, 2012 and Regulations ▪ Cabinet directives (such as the Cabinet Directive on Implementing the Canadian Environmental Assessment Act) ▪ Treasury Board of Canada guidance ▪ Policy and frameworks (such as the Treasury Board of Canada Secretariat’s Management Accountability Framework) ▪ Entity budget plans
China	<ul style="list-style-type: none"> ▪ Instructions of National Development and Reform Commission on the Adjustment of General Estimates of Total Investments in Golmud-Lhasa Section of Qinghai-Tibet Railway approved by the State Council and general estimates for preliminary design of Qinghai-Tibet Railway approved by Ministry of Railways accordingly ▪ Environmental Impact Assessment Report of Qinghai-Tibet Railway approved by Ministry of Environmental Protection of the People’s Republic of China and the Ministry of Water Resources of the People’s Republic of China and approval comments ▪ Standards such as laws, regulations, rules, and provisions ▪ Technical standards
Costa Rica	<ul style="list-style-type: none"> ▪ National regulations, such as the environmental impact assessment manuals, environmental law, forestry law, biodiversity law, and wildlife law ▪ Technical criteria from experts hired to support the audit findings ▪ Technical criteria from public institutions such as universities ▪ Criteria extracted from technical documents; for example, reports from the United Nations Environment Programme
Kuwait	Kuwait Environment Public Authority
Poland	No answer

Respondent SAIs	Sources of audit criteria provided
South Korea	Laws and regulations on EIA by Ministry of Environment
Uganda	<ul style="list-style-type: none"> ▪ <i>National Environment Act (Cap. 153)</i> ▪ Environmental Impact Assessment Regulation (S.I. No. 13 of 1998)
United States	<ul style="list-style-type: none"> ▪ <i>National Environmental Policy Act</i> ▪ Related regulations implementing the law
Zimbabwe	<ul style="list-style-type: none"> ▪ Statutes (acts) ▪ International conventions ▪ Entity's operating manuals

APPENDIX 6 EXAMPLES OF EIA LEGISLATION AND POLICIES IN VARIOUS COUNTRIES

Countries	Legislation and Policies
Africa	
Botswana	<i>Environmental Assessment Act, 2011</i> Environmental Assessment Regulations, 2012
Cameroon	<i>Law 94/01 of 20 Jan 1994 - EA within context of forestry, wildlife and fisheries management</i> <i>Law 96/12 of 5 Aug 1996 Article 17 - EIA for broader purposes</i>
Egypt	<i>Law number 4 of 1994 Promulgating the Environment Law</i>
Ghana	<i>Environmental Protection Agency Act, 1994</i> Environmental Assessment Regulations 1999 Regulator: Environmental Protection Agency
Kenya	<i>Environmental Management and Co-ordination Act, 2012</i>
Namibia	<i>Environmental Management Act, 2007</i> Environmental Impact Assessment Regulations, 2012
Asia	
Bangladesh	<i>Environment Conservation Act, 1995</i> Environment Conservation Rules 1997
Hong Kong	Environmental Impact Assessment Ordinance Environmental Impact Assessment Regulations Technical Memorandum

Countries	Legislation and Policies
India	<i>Environment (Protection) Act, 1986</i>
Indonesia	<i>Environmental Management Act, 1997</i>
Japan	<i>Environmental Impact Assessment Law, 1997</i>
Laos	<i>Environmental Protection Law, 1999</i>
OECD countries	
Australia	<i>Environment Protection and Biodiversity Conservation Act, 1999</i>
Canada	<i>Canadian Environmental Assessment Act, 2012</i> Cabinet Directive on Implementing the <i>Canadian Environmental Assessment Act</i>
New Zealand	<i>Resource Management Act, 1991</i>
United States	<i>National Environmental Policy Act, 1969</i>
Europe	
Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom	Directive 85/337/EEC on environmental impact assessment—applied to wide range of defined public and private projects
England and Wales	<i>Town and Country Planning Act, 1990</i>
Latin America and Caribbean	
Bahamas	<i>Environmental Planning and Protection Act, 2002</i> Environmental Impact Assessment Regulations (still in draft form)
Belize	<i>Environmental Protection Act, 2003</i> Environmental Impact Assessment Regulations
Brazil	Law 6.938/81 National Environmental Policy, 1981
Costa Rica	<i>Environmental Organic Law (Law No. 7554 of 1995)</i>
Guyana	<i>Environmental Protection Act, 2005</i>
Jamaica	<i>Natural Resources Conservation Authority Act, 1991</i>
Mexico	<i>General Law of Ecological Balance and Environmental Protection, 1998</i> Regulations of the General Law of Ecological Equilibrium, 2000



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United States *National Environmental Policy Act*



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