

GUID 5200

Activities with an Environmental Perspective



INTOSAI

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Pre-IFPP document - this document was developed before the creation of the INTOSAI Framework of Professional Pronouncements (IFPP) in 2016. It may therefore differ in formal purpose from more recent INTOSAI Auditing Guidelines.

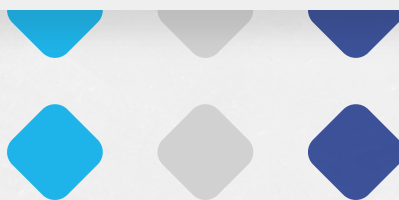


INTOSAI



INTOSAI, 2019

- 1) Adopted as an INTOSAI document entitled Guidance on conducting audits of activities with an environmental perspective in 2001
- 2) Incorporated in the ISSAI Framework as ISSAI 5110 in 2010
- 3) Content revised in 2016
- 4) With the establishment of the Intosai Framework of Professional Pronouncements (IFPP), renamed and relabeled as GUID 5200 - Activities with an Environmental Perspective, with editorial changes in 2019



FOREWORD

At the XVth INCOSAI in Cairo 1995, it was decided that, using the INTOSAI Auditing Standards as a basis, the INTOSAI Working Group on Environmental Auditing should develop a guide containing guidelines and methodologies for the conduct of environmental audits.

At the XVIth INCOSAI in Montevideo 1998, an exposure draft of the guide was presented. In the period after 1998, an amended draft was developed, using the suggestions and comments of the members of the INTOSAI Working Group on Environmental Auditing. At its 47th meeting in Seoul, October 2000, the INTOSAI Governing Board agreed to make the booklet an official INTOSAI-document, and subsequently that it should be brought forward to the XVIIth INCOSAI in Seoul, October 2001. Following the official INTOSAI procedure, the draft booklet was then sent out to all INTOSAI-members for comments, whereof about 25 reacted.

The purpose of this guide is to provide SAIs with a basis for understanding the nature of environmental auditing as it has so far developed in the governmental sphere. This basis is intended to provide a starting point from which each SAI can create its own approach to the satisfactory discharge of environmental auditing responsibilities within the context of each SAI's jurisdiction and mandate. It is therefore a very important tool for the further development of the practice of environmental auditing by SAIs.

I am honoured to present this guide to the XVIIth INCOSAI. The development of the guide was co-ordinated by the Office of the Controller and Auditor General of New Zealand. I would like to thank especially Mr. Terry McLaughlin and Mr. Martyn Pinckard for the dedicated and professional way they prepared this booklet. I also would like to express my gratitude to the members of the INTOSAI Working Group on Environmental Auditing and other SAIs who contributed to this guide by sharing their experiences and commenting on the draft versions.

I hope this booklet will be an inspiring and helpful tool for all SAIs interested in the further development of environmental auditing.

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LIST OF ABBREVIATIONS AND ACRONYMS

BATNEEC: Best Available Technology Not Entailing Excessive Cost

DOE: Department of Energy

ECETOC: European Centre for Ecotoxicology and Toxicology of Chemicals

EEA: European Economic Area

EMAS: Eco-Management and Audit Scheme

EU: European Union

EUROSAI: European Organization of Supreme Audit Institutions

GAO: General Accounting Office

GIS: Geographic information system

INTOSAI: International Organisation of Supreme Audit Institutions

IR: Indian railways

ISSAIs: International Standards of Supreme Audit Institutions

MEA: Multilateral Environmental Agreement

MPI: Management Performance Indicators

NAO: National Audit Office

NAOF: National Audit Office of Finland

NGO: Non-Governmental Organization

OAG Canada: Office of Auditor General Canada

OECD: Organisation for Economic Co-operation and Development

OPI: Operational performance indicators

PASAI: Pacific Association of Supreme Audit Institutions

SAI: Supreme Audit Institutions

TCU: Federal Court of Accounts of Brazil

UNEP: United Nations Environment Programme

UNFCCC: United Nations Framework Convention on Climate Change

WGEA: Working Group on Environmental Auditing

WHO: World Health Organization

A

BACKGROUND

- 1) Professional standards and guidelines are essential for the credibility, quality and professionalism of public-sector auditing. The INTOSAI Framework for Professional Pronouncements (IFPP) developed by the International Organisation of Supreme Audit Institutions (INTOSAI) aim to promote independent and effective auditing and support the members of INTOSAI in the development of their own professional approach in accordance with their mandates and with national laws and regulations.
- 2) *ISSAI 100 – Fundamental Principles of Public-Sector Auditing* provides the fundamental principles for public-sector auditing in general and defines the authority of the ISSAIs. *ISSAI 300 - Performance Audit Principles* builds on and further develops the fundamental principles of ISSAI 100 to suit the specific context of performance auditing. ISSAI 300 should be read and understood in conjunction with ISSAI 100, which also applies to performance auditing.
- 3) Furthermore, *ISSAI 3000 - Performance Audit Standard*, *GUID 3910 Central Concepts for Performance Auditing* and *GUID 3920 The Performance Auditing Process*, describe the features and principles of performance auditing and provide the basis for good performance audit practices.
- 4) GUID 5200 relates to conducting audit activities with an environmental perspective and belongs to the group of guidelines on specific subjects that have been developed by the INTOSAI Working Group on Environmental Auditing (WGEA). The document reflects the experiences of the Supreme Audit Institutions (SAI) and serves as a tool in assisting auditors in conducting audits with an environmental focus and for providing good practices.

- 5) The focus on environment is justified by the fact that compared to other policy area, environmental issues have certain specific characteristics, such as the complex nature of problems and their long-term impacts. Examples are provided in the section “Why Environmental Performance Audits are important” in the discussion paper “How to increase the impact of Environmental Performance Audits”¹.
- 6) Although the role of SAIs in sustainable development is not the topic of this GUID, SAIs conducting environmental audits may want to consider a broader sustainable development approach (see *GUID 5202 Sustainable Development: The Role of Supreme Audit Institutions*), as environmental audits often address social, economic and future-generation aspects.
- 7) This guidance is based on generally accepted principles of performance auditing as introduced in ISSAI 300 and current good practice in environmental auditing. It primarily covers environmental issues in the context of performance audits and has been written to meet the needs of this entire area.
- 8) Given the variety of environmental audit topics and their objectives, an environmental audit in the context of performance auditing may reflect compliance with legislative and regulatory frameworks as part of the audit. *GUID 5201 Environmental Auditing in The Context of Financial and Compliance Audits* describes further the environmental issues in the financial and compliance audit context.
- 9) An SAI does not need to have a specific mandate to conduct environmental audits and may perform them under the general authorisation to conduct performance or compliance audits. As the INTOSAI WGEA survey results from 2012 indicate, SAIs have become more aware of the ways their traditional mandate can be applied to examine environmental policies or programmes².

1 <http://www.ccaf-fcvi.com/images/stories/content/news-publications/research-publications-pdf/How-to-Increase-the-Impact-of-Environmental-PerformanceEN.pdf>

2 The results of the 7th INTOSAI WGEA survey from 2012 can be found at: <http://www.environmental-auditing.org/LinkClick.aspx?fileticket=g00jYuM7WEM%3d&tabid=129&mid=569>

- 10) Environmental audit is usually defined as a performance, compliance or financial audit addressing the approach taken by responsible bodies (e.g. governments) to a specific environmental problem, or environmental policies, or programmes, as well as their performance in managing environmental issues. An environmental perspective can, however, be integrated in any audit. For instance, an audit on public health issues might have a clear link to environmental pollution. Accordingly, limiting pollution could be of great value to citizens by increasing the well-being of a society and leading to considerable economic savings as provided in the following audit case.

Box 1. AUDIT CASE 1: Modelling social costs of water quality management

The SAI of Indonesia (BPK) completed in 2014 an audit that assessed the effectiveness of a government agency's activities in the Brantas River watershed. To calculate the effects of a decrease in water quality, BPK used a modelling approach to estimate the economic and social costs of pollution. The model describes the relationship between the degree of water pollutants in the water bodies (e.g. rivers) and the production costs for water companies using that water body as their raw material. The audit found out that the costs of water treatment increase as more pollutants enter the river. This leads to increased fees, which will disproportionately affect the poor. With the help of the model, the economic and social costs were calculated. BPK concluded that decision makers could use this social cost in a cost-benefit analysis of different economic growth policies. Additionally, District Governments should be aware that the tax revenue from the rapid economic growth could be overshadowed by the increase in social costs caused by environmental degradation.

- 11) The background section above provides an introduction with the general concepts of the guideline, while the three following sections specify applicable planning, subject matter and designing of environmental auditing based on current practices. Relevant examples of environmental performance audits from across the world are provided. One source of further audit case studies is the INTOSAI WGEA webpage³ and the Greenlines Newsletter⁴.

3 <http://www.environmental-auditing.org/Home/EnvironmentalAuditsWorldwide/AuditsbyIssue/tabid/125/Default.asp>

4 <http://www.environmental-auditing.org/Home/GreenlinesNewsletter/tabid/100/Default.aspx>

- 12) The first section of this GUID introduces essential elements in planning an environmental audit, e.g. audit approach focused on performance achieved, as well as environmental risks identification, and factors to be considered in order to maximise the value of an environmental audit.
- 13) Section two describes most commonly identified subject matters of environmental audits, in particular, performance of environmental programmes and their potential environmental impact, environmental management systems and their reporting procedures, and possible evaluations of proposed environmental policies and programmes. Performance of cross-cutting environmental issues, such as environmental issues impacted by multiple government entities or programmes, is promoted as well.
- 14) The third section sets out specific elements in designing environmental audits, e.g. audit questions, methods and techniques, audit criteria and data collection. It also deal with environmental performance indicators and possible impacts of environmental audits.

B

PLANNING THE AUDIT

B.1. ESSENTIAL ELEMENTS OF ENVIRONMENTAL AUDITS

- 15) Given that environmental issues are often complex in nature, SAIs can innovatively apply various methods and techniques developed in other disciplines in order to plan and carry out high-quality audits¹.
- 16) When planning an audit, it should be considered that various policy areas and organisations have an impact on the environment, and, as a consequence, their policy, operations and management might be a subject matter. For instance, organisations whose operations directly or indirectly affect the environment, and whether these operations could have positive effects such as nature protection, or negative ones such as polluting activities or unsustainable use of natural resources. The following case presents an example of auditing the Indian railways' environmental management which affects also other environmental policy areas.

1 GUID 3920, section Selecting an audit topic as part of the strategic planning process.

Box 2. AUDIT CASE 2: Environmental management of Indian railways

The SAI of India assessed the environmental impact of Indian railways (IR) covering 65 000 route km and carrying 7,6 million passengers and almost a billion tonnes of goods a year¹. IR is a huge consumer of energy and generator of waste, as well as air, water and noise pollution. The audit found that IR has yet to formulate comprehensive environmental guidelines. Major stations need to be equipped with effluent treatment plants. The use of non-conventional energy sources needs to be enhanced and measures should be taken to decrease waste burning and dumping. Finally, attention should be paid to animals, as for instance many elephants die when struck by trains.

One challenge in the audit was to create audit criteria. In the IR, there is no separate environmental management unit for framing environmental policies or guidelines.

Therefore, the SAI of India used general environmental criteria and extrapolated criteria from various general acts, rules and regulations issued by the government. Also best practices worldwide were useful, including the use of bio toilets or rain water harvesting systems.

- 17) Depending on the subject matter, the economy, efficiency or effectiveness, i.e. 3Es of governance and public spending can be scrutinised in any of the relevant policy areas. An environmental audit is applicable, for example, to organisations that collect and produce environmental data and information and have the power to monitor and control the environmental actions of others. The subject matter will be dealt with in paragraphs 27-56.
- 18) From an economic perspective, environmental matters often face market failures², meaning that the costs of environmentally damaging activities are not fully recovered. It means that it is not always easy to put a price tag on clean air or a beautiful landscape. Therefore, it is important that auditors pay attention to the non-direct impacts and non-direct costs related to environmental matters (see the Audit Case 3 below and GUID 5201 Audit Case 1: Ecosystem

1 http://saiindia.gov.in/english/home/Our_Products/Audit_Report/Government_Wise/union_audit/recent_reports/union_performance/2014/Railway/Report_23/Report_23.html

2 For further information, see INTOSAI WGEA publication on Market based Instruments for Environmental Protection and Management (2016)

services). In order to deal with such environmental externalities, governments have increasingly put in place environmental taxes, charges and subsidies, as well as cap-and-trade schemes, for instance for carbon dioxide emissions. If these systems are in place, auditing the economy, efficiency and effectiveness of these systems is one possible approach for SAIs.

Box 3. AUDIT CASE 3: An audit of externalities – the effluent charge in Colombia

The SAI of Colombia has audited various economic, financial and tax instruments related to environmental management between 2008 and 2012, including effluent charges, logging charges, environmental certificates and tax deductions for environmental investments.

The effluent charge is one of the main regulation instruments in Colombia aiming to avoid high levels of water pollution, as well as an important source of funding for state institutions that are responsible for environmental management at the watershed level. The audit on effluent charges evaluated the design and efficiency (invoicing and collection) of charges and their impacts on improving water quality.

The analysis found many inconsistencies between data used for invoicing and discharges' data self-reported by regulated agents. SAI's reports showed that the instrument was not effective in preventing and mitigating pollution and had no impact on water quality recovery. Thus, the economic instruments for environmental management failed to change polluters' rationale, and as a consequence they became just another financial source for the environmental authorities, without any impact on water resources recovery.

In the audit, the main difficulty was the lack of information related to the implementation of the instrument: pollutant loads, flow rates, georeferenced points of pollution sources and water quality in receiving bodies. To improve the evaluation, it is essential to have historical data that can be compared to self-reports. When possible, the evaluation should be performed at watershed level, considering the actions of each of the environmental authorities and the water quality indicators, in order to measure the effectiveness of the instrument.

- 19) In the course of planning, auditors choose a result-, problem- or system-oriented approach, or a combination thereof to facilitate the soundness of audit design¹. Nevertheless, auditors should select subject matters with a high level of environmental, social, economic or political impact and visibility with the aim of identifying how the aspects, processes or systems under review can be improved.
- 20) When planning an audit of an environmental programme, a SAI should take into account the performance and any potential risks to achieving the concepts of economy, efficiency and effectiveness. The audit will rather examine certain issues related to the 3Es, or a combination of them, based on the significant environmental risks that the audit would address, as well as their materiality, relevance and auditability.
- 21) In order to achieve the best possible impact of the environmental audit, the auditor needs to ensure the general focus on timeliness at the planning stage of the audit². The auditor must consider the possible impact of the report on upcoming legislation and should have regard to the political agendas. The following case represents an example of a timely planned audit.

1 *INTOSAI-P 20 Principles of Transparency and Accountability*, (principle 8) and ISSAI 300 (paragraph 39)

2 European Court of Auditors (2014). The effectiveness of European Fisheries Fund support for aquaculture. http://www.eca.europa.eu/Lists/ECADocuments/SR14_10/QJAB14010ENC.pdf

Box 4. AUDIT CASE 4: An audit well-timed: aquaculture in the EU

One of the aims of the common fisheries policy in the European Union (EU) is to encourage the sustainable development of aquaculture. In 2014 the European Court of Auditors examined whether the measures of the European Fisheries Fund were well designed and implemented, and whether they delivered value for money¹.

Knowing the preparation period of the EU Member States' multiannual strategic plans for the sustainable development of aquaculture, and the design period for the EU's new Maritime and Fisheries fund 2014-2020, the audit was planned and timed so that its results could feed into these two schemes.

The audit found that at the EU level, measures to support the sustainable development of aquaculture had not been well designed and monitored. At the Member State level, for instance the coherent strategies for the sector were lacking. Thus, for the period up to 2013, there was an inadequate framework at EU and Member State level to translate the EU's objectives for the sustainable development of aquaculture into reality. Measures actually taken did not provide sufficient results. Because of the timing of the audit, the likeliness of having an impact on the public sector was increased.

B.2. RISK ASSESSMENT

- 22) In environmental auditing the risk assessment in the planning phase aims to ensure that the audit covers aspects related to most significant environmental risks and therefore maximising added value. Environmental risks are considered as the probability that an activity will lead to environmental and/or health damage accompanied by potential economic, social and environmental consequences. In particular, environmental risks might have a very long-term impact in the ecosystems, as illustrated with the following audit case on nuclear safety.

¹ European Court of Auditors (2014). *The effectiveness of European Fisheries Fund support for aquaculture*. http://www.eca.europa.eu/Lists/ECADocuments/SR14_10/QJAB14010ENC.pdf

Box 5. AUDIT CASE 5: Long-term environmental risks

Some environmental risks have a time scale crossing several generations to come. One example is nuclear safety, which was audited by the UK NAO in Sellafield, where nuclear operations started in the 1940s^{<?>}. Successive operators of the site did not give sufficient thought to decommissioning or retrieving and disposing of radioactive waste. The NAO's audit from 2012 examined whether the current authority is cost-effective in reducing risks on the Sellafield site through its major projects. The evaluative criteria and evidence base of the audit were:

EVALUATIVE CRITERIA	EVIDENCE BASE
Well-evidenced and logical strategy and plans identifying, prioritizing and addressing the risks at Sellafield	Review of authority's documentation on its strategy and the lifetime plans for Sellafield
	Review of authority's process for risk management and prioritisation through case examples
	Examination of financial data relating to delivery of the plan and achievement of efficiencies
	Semi-structured interviews with members of the Authority's executive and site facing team and key stakeholders including the regulatory authority
Appropriate and sufficient action to incentivise good performance and tackle drivers or poor performance	Review of Authority's documentation on the projects
	Examination of project level data on costs and schedules
	Semi-structured interviews with the Authority's site facing team and project and programme managers at Sellafield

On the other hand, the longer term changes in the environment can put the man-made infrastructure under risk. As an example, US GAO has evaluated the federal government's efforts to incorporate future climate change impacts into planning for critical infrastructure projects^{<?>}. GAO has identified the United States' fiscal exposure to the risks of climate change as a High Risk to its government since 2013.

The audit focused on fiscal exposure in Federal Government's role as (1) leader of national strategic plan, (2) property owner, (3) the insurer of property and crops vulnerable to climate impacts, (4) the provider of data and technical assistance to other government levels and decision-makers, and (5) the provider of aid in response to disasters. When it comes to infrastructure projects, GAO pointed out that they often have lengthy, multi-decadal spans that make them particularly vulnerable to long-term concerns such as sea level rise.

- 23) In public auditing, environmental risks are often related to public authorities' efforts in identifying and reducing these negative consequences by implementing environmental management actions and policies. The risk is that these management actions may be insufficient, and fail to deliver an environmental policy or programme economically, efficiently, or effectively. The severity of these risks is measured by their potential negative economic, social and environmental impact.
- 24) Environmental risk assessment should derive from the knowledge acquired of the audit area and lead to audit questions and scope. When assessing the nature and likelihood of the potential environmental effects, governments' responsibilities need to be considered and how environmental policy instruments influence these potential effects. The effectiveness of these instruments influences the likelihood of the potential environmental effects occurring.
- 25) Commonly experienced difficulties concerning the use of risk assessments are the availability and reliability of environmental data and indicators.

Where sufficient quality data does exist, one way to facilitate better understanding is the use of key visual data like maps and graphs to support the identification of gaps.

- 26) Many organisations (such as OECD, WHO, EEA and ECETOC)¹ are now actively involved in environmental risk assessment models, which provide a good source of environmental risk factors resulting from technology that poses a threat to ecosystems, animals and people.

1 <http://www.oecd.org/>; <http://www.who.int/en/>; <http://www.eea.europa.eu/>; <http://www.ecetoc.org/>

C

SUBJECT MATTER

- 27) An environmental audit in the context of a performance audit of Government, may include in its scope:
- i) the performance of environmental programmes;
 - ii) the environmental impact of other programmes;
 - iii) environmental management systems and environmental reporting;
 - iv) evaluations of proposed environmental policies and programmes;
and
 - v) addressing cross-cutting environmental issues.
- 28) As previously stated an environmental audit may consider in its subject matter elements of compliance with relevant laws and regulations, organisation's policies and systems. Audit results arising from compliance and performance audits can often be complementary. Basic elements on environmental auditing in the context of a compliance audit are included in GUID 5201.

C.1. AUDITING THE PERFORMANCE OF ENVIRONMENTAL PROGRAMMES

- 29) Environmental programmes can typically be identified from Government plans and annual reports. Sometimes, a Government assembles its environmental programmes in a single environmental plan and report. Where such a plan does not exist, SAIs can assist accountability through reporting the various Government policies and programmes that do exist. To do this, SAIs may consider the major environmental concerns affecting their country and then identify and list the programmes established by the Government to address them.
- 30) An SAI may find it useful to identify the international agreements on environmental matters to which the Government has agreed (for example, related to the UNFCCC¹), and then identify the programmes established to achieve them. Useful guidance on auditing multilateral environmental agreements is referenced below, followed by an example of recently audited International Convention on Biological Diversity targets' achievements by OAG Canada.

Box 6. AUDIT CASE 6: Guidance on auditing multilateral environmental agreements

In 2010, INTOSAI WGEA and United Nations Environment Programme (UNEP) published a Primer for Auditors on auditing the implementation of multilateral environmental agreements (MEAs). The publication explains what MEAs are, how they could be audited and lists various agreements. The guidance notes that SAIs often face difficulties in deciding on good criteria for performance audits, and suggest that MEAs might provide help.

If the country has signed MEAs, the most common approach according to the guidance, is to evaluate how well the country has met its responsibilities and obligations under the MEAs, and how these responsibilities have been given effect by national legislation and governance.

If a country has not signed MEAs, they can still be a good source of audit criteria because many agreements can be referred to as a best practice or benchmark. Also the reasons for not being a signatory to the MEAs can be brought to public attention.

As an example, OAG Canada audited the meeting of the goals of the International Convention on Biological Diversity in 2013². The audit criteria

1 United Nations Framework Convention on Climate Change

2 Report of the Commissioner of the Environment and Sustainable Development, Fall 2013. http://www.oag-bvg.gc.ca/internet/docs/parl_cesd_201311_02_e.pdf

and their sources for the two questions were the following:

AUDIT OBJECTIVE:

- Determining whether Environment Canada (the Canadian Department of the Environment) has:
- fulfilled selected responsibilities as National Focal Point for the Convention on Biological Diversity (specifically with respect to monitoring, promoting, and facilitating implementation of the Convention), and
- developed and applied models for the economic valuation of biodiversity and ecosystem service.

CRITERIA	SOURCES
Has Environment Canada fulfilled selected responsibilities as the National Focal Point for the Convention on Biological Diversity?	
Environment Canada has defined what results it wants to achieve as the National Focal Point.	<ul style="list-style-type: none"> • Department of the Environment Act
Environment Canada has identified the actions and resources necessary to achieve these results	<ul style="list-style-type: none"> • A Biodiversity Outcomes Framework for Canada
Environment Canada has tracked the implementation of these actions and achievements of results	<ul style="list-style-type: none"> • Convention on Biological Diversity Terms of Reference for National Focal Points, Conference of the Parties, Decision VIII/10
Has Environment Canada developed and applied models for the economic valuation of biodiversity and ecosystem services?	
<p>Environment Canada has developed models for economic valuation of biodiversity and ecosystem services in support of sustainable development decision making.</p> <p>Environment Canada has applied models for economic valuation of biodiversity and ecosystem services in support of sustainable development decision making.</p>	<ul style="list-style-type: none"> • Federal Sustainable Development Strategy, 2010 • Canadian Biodiversity Strategy • 2012–13 Report on Plans and Priorities of Environment Canada

- 31) A SAI may consider whether to focus its attention on one main policy instrument or on many different policy instruments. Practical difficulties of the former may include setting objective audit criteria and reaching convincing audit conclusions. The challenge of the latter is in judging how far the results of the various instruments can be combined to identify the total impact of the audited entity.
- 32) Where few resources are involved but the potential impact of the programme or activity is significant, the scope of the audit may be better directed to the effectiveness of the programme or activity in achieving impact. SAIs may also be able to narrow the scope of its audit to areas where there is evidence that the planned targets are not being met, or where the results of the audit will have the greatest impact.
- 33) The auditor should bear in mind that environmental programmes may be aiming for impacts which:
- are individually small-scale but cumulatively large-scale;
 - take a long time to have a noticeable effect;
 - are affected by significant external factors – such as weather conditions and other activities that also have an impact on the same environment; and
 - can be cross-border or even global in nature.

The auditor should consider the above mentioned effects to the extent possible at the planning stage of the audit as oriented towards performance achieved.

C.2. AUDITING THE ENVIRONMENTAL IMPACTS OF OTHER PROGRAMMES

- 34) Environmental programmes aim to protect or improve the environment. However, other Government activities may affect the environment in some way through their use of resources or their consequences to the area in which they are conducted.
- 35) Some Government programmes have significant impacts – which may be both, positive and negative, intended and unintended. For example, the primary objective of road building is to facilitate movement of people or goods. But building a road has a secondary and direct impact through its land use and its effect on the ecology of the area and the landscape, whilst the construction and use of the road also has an impact on air and noise pollution. Information on infrastructure development cases is provided below.

Box 7. AUDIT CASE 7: Infrastructure development

INTOSAI WGEA published in 2013 a study on environmental issues associated with infrastructure development.¹ It aims at helping auditors identify the types of issues they can address in their audits. The paper includes several case studies that deal both with focused environmental impacts of a particular infrastructure development, as well as wider audits that seek to address the environmental and sustainability issues alongside other issues, such as the efficiency and effectiveness of the programme.

As an example, the United Kingdom NAO undertook a series of studies on the preparations for the London 2012 Olympics from the initial bid through to readiness for the Games in 2012. The audits examined the project at multiple stages of the infrastructure lifecycle as the project progressed. The reports addressed plans to deliver the project's commitment to achieving long term, sustainable regeneration alongside wider consideration of cost and progress

¹ INTOSAI WGEA (2013). *Environmental Issues Associated with Infrastructure Development*. <http://www.environmental-auditing.org/LinkClick.aspx?fileticket=ErSK4LP8z88%3d&tabid=128&mid=568>

against plans. Later in the project the audit included a focus on the sustainable use for the sites and the legacy from the games. The series of studies allowed audit recommendations to feed into the start-up and construction phases of the project and enabled close monitoring of progress against the original plans and objectives.

- 36) Similarly, industrial development programmes can aim to develop targeted industries, providing opportunities for increased employment and economic activity. Also, the purpose of military activities is to maintain the capability required to defend national territory and contribute to wider security interests and the promotion of peace. However, such developments can have a range of environmental impacts, from use of significant quantities of non-renewable resources, to pollution and loss of biodiversity.
- 37) As a starting point for identifying the impacts of Government activities on the environment, a SAI can usefully familiarise itself with any commitments the Government has made to identifying these impacts for itself and taking them into account in its policy appraisal. Best practice suggests that Government should integrate environmental issues into other policies and that public organisations should embrace environmental concerns in their strategic policy objectives, and in their appraisal of new and existing activities. Some Governments have adopted such an approach and have also ensured that Government activities are subject to the same environmental laws and regulations as non-governmental activities. Useful guidance, case studies, reports on the application of Environmental Impact Assessment and Strategic Environmental Assessment are published on the European Commission website¹.
- 38) The SAI's audit should consider the Government's own assessment (if any) of the likely environmental impacts. The auditor may review the adequacy of:
- the description of the programme or activity, its environment and the

1 <http://ec.europa.eu/environment/eia/sea-support.htm>

- baseline conditions;
 - the completeness of the range of key impacts identified;
 - the data used to assess the likelihood of the impacts and their expected scale; and
 - any proposals for measures to counter the impacts.
- 39) The auditor may wish to assess, with the assistance of experts and interest groups, the likely type and scale of impacts of a Government activity on the environment, and any values that can be placed on their costs and benefits.
- 40) Environmental regulation can apply to Government activities which have secondary impacts on the environment. In these cases, the Government department or agency charged with monitoring compliance with the regulations will have primary responsibility for testing compliance. The auditor may consider it appropriate to audit compliance against the regulations in agreement with the regulator (for compliance audits please refer to GUID 5201. However, the auditor can also audit the performance of the supervisory agency.
- 41) From the outset the Government Programmes may identify measures which counter or reduce environmental impacts. The SAI's audit may address whether these measures:
- have been put in place and are in accordance with best practice or Best Available Technology Not Entailing Excessive Cost (BATNEEC); and
 - have had the preventive effect intended, and, if not, what actions the Government has taken instead.
- 42) In some cases the counter-measures may need to be suitable for preventing or dealing with low-risk but major-impact occurrences, such as unintended releases of radioactive substances. Accident and incident procedures may be rarely used, but they need to be kept operable, in case of need. Where such procedures are important, a SAI's audit may review:
- the procedures;
 - the dimensioning;

- the training of any staff involved;
 - the frequency of testing the procedures; and
 - whether any arrangements required with third parties (suppliers, emergency services, etc.) are up-to-date.
- 43) When undertaking a narrowly defined study focusing solely on environmental impacts, the auditor will need to consider carefully how to provide a fair reflection of the impacts against the costs and benefits of the programme's primary objective.

C.3. ENVIRONMENTAL MANAGEMENT SYSTEMS AND ENVIRONMENTAL REPORTING

- 44) Environmental management systems are tools for organisations to set systematically environmental policies and continually improve environmental performance. Environmental management systems are typically developed for private sector purposes, but can also be applied by public sector organisations.
- 45) Voluntary accreditation schemes have been introduced to enable organisations to obtain external confirmation of the adequacy of their environmental management systems and recognition that they are operating such systems. For instance, the management systems following the International Standard for Environmental Management Systems, ISO 14001, can be certified by an external auditor. Here, environmental audit is part of the accreditation, even if its scope is much more limited compared to environmental audits conducted by the SAIs.
- 46) Environmental management systems require organisations to set themselves targets for continuous improvement in performance and to monitor achievements. A SAI might consider whether it should audit and report on the actual performance targets set by the Government. For such an audit the SAI could usefully consider the process by which the targets were set, how the Government's targets compare with practices elsewhere and with the Government's commitments to international agreements.

- 47) A SAI may also consider whether Government monitoring of departments' environmental management systems and reporting of environmental performance make them sufficiently accountable to the legislature and the public for meeting key performance targets. The SAI could undertake an audit to identify the level of performance and reasons for non-achievement of targets, or assess the quality of environmental risk assessments. The following audit case refers to the existence and effective implementation of organisations' policies and procedures to reduce the negative impact of their activities on the environment.

Box 8. AUDIT CASE 8: Are public sector organisations leading the way?

The European Union (EU) has introduced an Eco-Management and Audit Scheme (EMAS), where companies and other organisations have their environmental policies, programmes, management systems and reports verified by a third party¹.

The European Court of Auditors assessed whether the EU institutions and bodies had policies to reduce the impact of their administrative operations on the environment, and whether these policies were implemented effectively². The Court examined whether EU bodies (1) calculated their greenhouse gas emissions, reduced those emissions and compensated for residual emissions through offsetting, and (2) made full use of the environmental management tools promoted by the EU Commission to reduce emissions.

The audit was based on questionnaires and interviews and an analysis of documents and statistics, either published or made available by the audited EU institutions and bodies. It also included an examination of a sample of procurement procedures. The audit found that only seven of the 15 audited EU bodies had been registered with the EMAS scheme. As not all institutions had disclosed their emissions, the full carbon footprint is not known.

- 48) Besides internal management systems, reporting about organisations' environmental performance to the stakeholders and the wider public has become more popular. This has led to the development of environmental reporting, as well as broader sustainability and corporate social responsibility reports covering social issues.

1 http://ec.europa.eu/environment/emas/index_en.htm

2 European Court of Auditors (2014). *How do the EU institutions and bodies calculate, reduce and offset their greenhouse gas emissions?* http://www.eca.europa.eu/Lists/ECADocuments/SR14_14/QJAB14014ENC.pdf

- 49) SAIs could have a role in assessing the effectiveness of the reporting frameworks either on the whole government level or concerning a single organisation. The role of organisations varies: some government departments might undertake industrial processes which have a significant impact on the environment, while others might be largely administrative. Here, real environmental impacts might come from the indirect actions, such as how well environmental aspects are assessed and taken into consideration in policy making or legislative work.

C.4. GIVING OPINIONS ON PROPOSED POLICIES AND PROGRAMMES

- 50) SAIs may be called upon to provide opinions on proposed policies or programmes to their legislatures. The task could for instance be to analyse the underlying statutory requirement's needs, modifications to make the programme more cost-effective, or to improve it in other ways.
- 51) Generally, such work poses both challenges and risks. In particular, analyses of proposed policies or programmes may require skills outside those normally associated with auditing disciplines. The use of the regulatory impact analysis tool may be useful, the purpose of which is to examine planned policies and programmes, as well as possible alternatives.³
- 52) Even with the assistance of experts, the nature of such analyses carries additional risks to the SAI, particularly if it is viewed as taking sides in debates over matters of policy. In addition, where a SAI evaluates a proposed programme, and subsequently audits the performance of the programme, which may have been implemented in accordance with its earlier evaluation, the risk of potential conflict of interest arises.
- 53) In some circumstances, the auditor may find it necessary to decline the request if the risk is viewed as unacceptable. As a practical matter, however, the auditor can usually find ways to at least partially satisfy the information needs without undue risk.

3 See also INTOSAI WGEA research paper on *How to increase the quality and impact of environmental audits*.

- 54) In that case, the auditor may consider providing factual information rather than judgements. Indeed, it is less controversial, and may be more in line with the traditional roles of SAIs, to provide factual and analytical information on the impacts of alternative policy directions rather than recommend a specific alternative action.
- 55) It is often risky for the SAI to evaluate proposed policy alternatives if its analyses involve speculative assumptions about such matters as future rates of economic growth, or about technical factors such as how ecosystems respond to various pollution- related stresses. However, other organisations often perform these analyses, and typically report their methodologies and underlying assumptions along with their findings. Rather than having to defend its own assumptions (and potentially leaving itself open to the criticism that its assumptions were made subjectively), the auditor may find it more useful to evaluate these other studies' assumptions, findings, and conclusions.

Box 9. AUDIT CASE 9: Examining ongoing activities

On a general level - in an effort to be more proactive - the GAO has made use of their cost estimating guide as criteria for a forward look at ongoing programmes to try to identify risks. The cost guide⁴ is very detailed, but provides a set of criteria that identify the elements of good cost estimation, such as whether the estimate is creditable, reliable and accurate.

The GAO of the USA sometimes gets involved in on-going work. The GAO for instance pointed out some challenges that the Department of Energy (DOE) faces in managing information related to agency funded inventions⁵. Under federal internal control standards, information should be recorded and communicated to management and others within the entity who need it and in a form and within a time frame that enables them to carry out their responsibilities. The GAO found that the DOE relies on two different data systems that are outdated, unable to communicate with each other, and do not allow electronic reporting.

4 GAO Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs. <http://www.gao.gov/products/GAO-09-03sp>

5 GAO (2015): Federal Research: DOE Is Assessing Invention Disclosure and Other Challenges but Needs a Plan to Guide Data Management Improvements. <http://www.gao.gov/products/GAO-15-212>

The GAO also found that the DOE is in the process of updating its data systems and is planning the development of an electronic reporting function, but has not established an implementation plan with milestones against which it can check its progress toward completing these efforts. By developing such a plan, the DOE would have greater assurance that it is making timely progress toward these efforts.

C.5. ADDRESSING CROSS-CUTTING ENVIRONMENTAL ISSUES

- 56) An auditor performing an environmental audit may include in its scope the governance of environmental topics which interact in various policy areas, programmes and projects. Possible cross-cutting issues may affect general topics like sustainable development, national capacities to address environmental policies, programming and planning, cost-benefit analysis of environmental regulations and interventions, and mainstreaming climate change, as well as particular themes in water and energy resource management, environmental impact, and performance criteria in resource allocation systems. Procurement policies are also a concrete example of cross-cutting issues. Addressing cross-cutting environmental issues in the audit may provide valuable information to policymakers and contribute to more cost-effective and optimal use of resources and expertise. The following audit case is tackling soil degradation prevention management as it might be affected by other policies and programmes and represents a cross-sectoral issue.

Box 10. AUDIT CASE 10: Information campaign to prevent soil degradation

Lesotho is a mountainous country where only 9% of the land is arable. Due to agricultural pressures, the average soil erosion rate is as much as 40 million tonnes per hectare a year. Soil management needs a cross-sectoral approach because the pressure comes from practices in other sectors, such as farming and grazing.

The SAI of Lesotho audited the management of soil erosion. The main audit question was why the measures put in place by the Department of Soil and Water Conservation to curb soil erosion were ineffective. One of the audited areas was public information campaigns where the government's responsible department produced radio and TV-programmes and other promotional materials including audio-visuals, posters and technical bulletins on soil conservation.

The SAI observed the gaps related to radio programme broadcasting time, as well as the small number of citizens that have an access to TV-receptions. The audit discovered that promotional materials do not reach the majority of the target groups. Not all information users have access to electricity and thus some materials cannot be reached by everyone. Accordingly, due to the gaps in information dissemination, the promotional campaign had little impact on people continuing with improper land use practices. The audit recommended that the Information Unit should schedule radio programmes in the evenings, and more public gatherings should be held in order to disseminate the audio-visuals to a broader audience.

D

DESIGNING THE AUDIT

- 57) When designing the audit, the auditor should apply audit procedures in order to gather sufficient appropriate audit evidence. Deciding on the overall audit design implies consideration of the audit questions, sampling, and data collection techniques, etc.

D.1. AUDIT QUESTIONS, METHODS AND TECHNIQUES

- 58) Sufficient knowledge of the area and having an initial set of topics to start developing the audit questions will typically be arrived at through activities such as desk research, meetings and brainstorming sessions. The purpose of the main audit question is to provide the main focus and scope of the audit. It thus sets out the parameter for the whole design of the audit.
- 59) Examples of audit questions:

Economy

Is there potential for equitably reducing the cost of energy production? (auditing performance directly).

Does the management of the cotton production aid scheme include consideration and monitoring of the costs, including those of the consumers? (auditing control systems).

Efficiency

Is the governance of the government's response to apply the policy for mitigating climate change efficient? (auditing performance directly).

Has the government addressed the need for climate change action in the most vulnerable sectors and areas? (auditing control systems).

Effectiveness

Have the infrastructure projects contributed to the reducing emissions flow while reducing journey times and improving safety? (auditing performance directly).

Has the Agency set up and properly implemented suitable measures to monitor and mitigate environmental impact in the sugar sector? (auditing control systems).

- 60) In choosing the methods and techniques the auditor needs to be guided by the purpose of the audit and the specific questions to be answered. Clear, robust and practical methods should be identified in order to obtain sufficient, relevant and reliable audit evidence.
- 61) Interviews or focus groups are widely used in performance audits to supplement the documentary reviews. Talking to stakeholders (authorities and other affected parties) helps not only to gather facts, but also knowledge that is not officially documented.
- 62) The auditor may need to arrange site visits to a variety of government agencies as well as beneficiaries in order to assess how effectively public funds have been spent, how well environmental regulatory activities are working, and where improvements can be made. A questionnaire or survey might be useful if a large number of organisations or individuals must be contacted or if there is a need to quantify information.

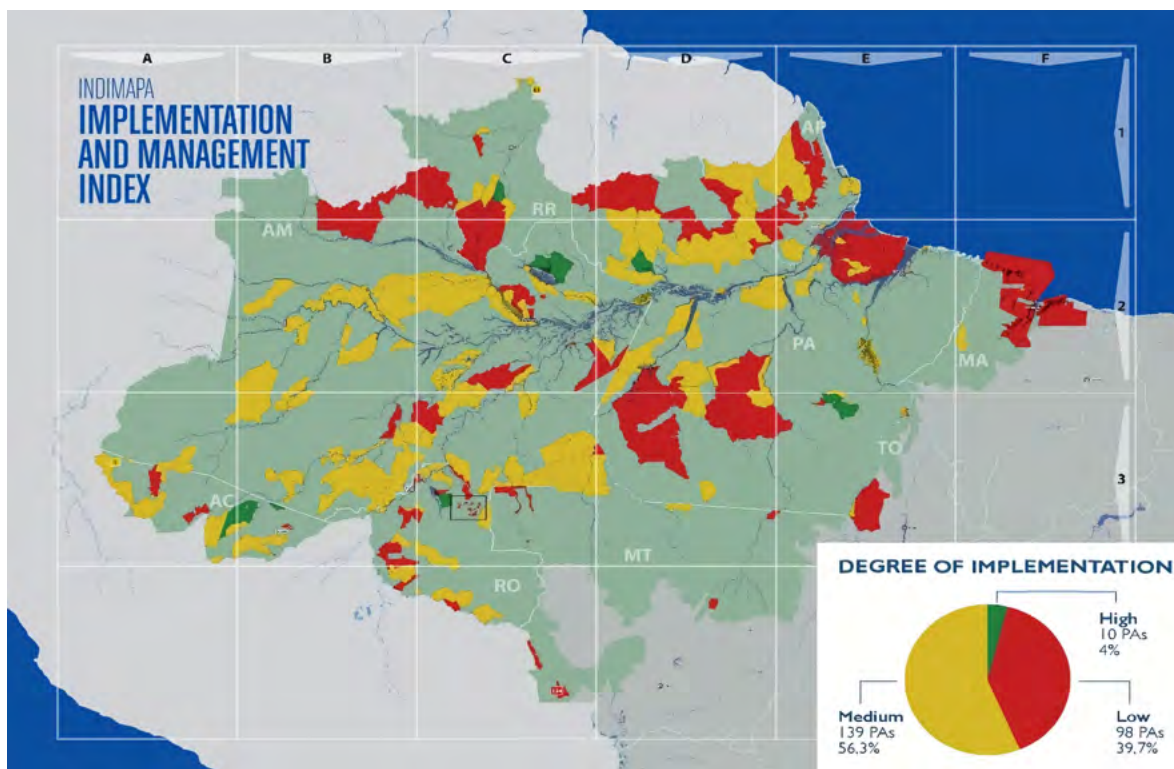
- 63) In certain instances, auditors may need to examine environmental issues concerning a large number of entities such as toxic waste sites, chemical storage facilities, and drinking water supply systems. The necessary information about these entities may not exist in a database or other usable form. In that event, one of the SAI's alternatives may be to gather the information from a valid statistical sample of the entities in question, and then use the information to draw conclusions about the characteristics of the overall population. Even where detailed information exists only at an overall level, statistical sampling can still be applied to give assurance on its accuracy, so the audit may focus on the overall outcome, instead of being concentrated on the scope of entities.
- 64) Geographic information system (GIS) is a powerful tool to analyse and present spatial and geographical data. GIS could be a valuable tool in analysing the regional aspects and differences of environmental problems, as well as presenting them in a visual way similar to the following example.

Box 11. AUDIT CASE 11: GIS in the audit work

In 2012-2013, the Federal Court of Accounts of Brazil (TCU) and the nine state Courts of Audit in the Brazilian Amazon carried out a cooperative audit to assess protected areas in the Amazon biome¹. The TCU created the Protected Areas Implementation and Management Index, which helps in evaluating, communicating and monitoring protected areas through geo-referenced maps. The instrument classifies protected areas in red, yellow and green using 14 indicators.

The audit verified that only 4% of the protected areas in the Brazilian Amazon are considered to have a high degree of implementation and management. The audit also observed that creation and maintenance of protected areas offers important benefits related to deforestation control and reduction of carbon emissions. There are also however, objectives going beyond nature protection that have positive impacts on local economics. Protected areas can contribute to tourism, research and sustainable logging and thus have an impact on jobs, income and quality of life locally.

1 Federal Court of Accounts (2014). *Amazon Biome, Protected Areas*. <http://portal2.tcu.gov.br/portal/pls/portal/docs/2642555.PDF>



The SAI of Malaysia has recognised the possibilities of GIS in interconnecting information systematically and effectively for instance on natural disasters, such as increased landslide risks on highlands and hill slopes. The SAI has signed a Memorandum of Understanding with the Malaysia Remote Sensing Agency that will assist the SAI in managing remote sensing-based spatial data for selecting samples, making other key decisions, and as an audit analysis tool.

65) Other more complex environmental audit tools include spatial web dossier, counterfactual analyses, use of micro and macro-economic models, or vignette surveys. EUROSAI WGEA has collected these methods in their website¹. Auditors may use innovative new sources of information, such as social media. These might be helpful in gathering wider public opinions for instance by using focus groups and surveys on specific topics or for instance in identifying possible audit topics. Planning should assure flexibility and a combination of various methods may assure that a topic will be scrutinised carefully and from multiple perspectives. Details are provided in the box below and are referenced to the relevant sources.

1 <http://www.eurosaiwgea.org/auditingtools/>

Box 12. AUDIT CASE 12: Water and audit methodologies

INTOSAI WGEA published in 2013 an examination of methodological tools that SAIs have used in audits related to water issues¹. The document introduces water as an environmental audit topic, and provides an analysis of the ways in which SAIs have audited regarding water issues, as well as a toolbox of various methodologies that have been successfully used while auditing water topics. The paper includes several good examples of water audits and serves as a useful source of information on methods suitable for any audit area².

For instance, Tanzania assessed in an audit how the central, regional, and district governments managed flood disasters. Audit criteria included law, policy and national guidelines. The methods included document analyses, interviews, and using photographic evidence. Focus groups were also used to gain perspectives from local citizens.

D.2. ESTABLISHING AUDIT CRITERIA

- 66) Auditors should assess whether audited entities have used appropriate techniques and methodologies to assess whether reasonable and valid environmental performance measures are used.
- 67) In carrying out environmental audits auditors need to define or develop relevant, complete, understandable, and reliable audit criteria, against which the audited entities' subject matter or performance will be measured³ (see also the CASE STUDY No 2).
- 68) The two interrelated axes for establishing the audit criteria are: the type of audit to be performed (ISSAI 300 & 400), and the subject matter and sources of the criteria, hence, the broad audit objective.

1 INTOSAI WGEA (2013). *Auditing Water Issues: An Examination of SAIs* <http://www.environmental-auditing.org/LinkClick.aspx?fileticket=oeKb3spnanE%3d&tabid=128&mid=568>

2 <http://www.environmental-auditing.org/LinkClick.aspx?fileticket=oeKb3spnanE%3d&tabid=128&mid=568>

3 ISSAI 100, paragraph 27

- 69) While different types of audit are recognised they do not necessarily have to be carried out separately. A compliance audit in particular could form part of a performance audit focused on environmental issues.
- 70) The audit criteria can be qualitative or quantitative and should define what the audited entity will be assessed against. The criteria may be general or specific, focusing on what should be according to laws, regulations or objectives; what is expected, according to sound principles, scientific knowledge and best practice; or what could be (given better conditions) (ISSAI 300, paragraph 27).
- 71) As the general concepts of economy, efficiency and effectiveness need to be interpreted in relation to the subject matter, audit criteria will vary from one environmental audit to another, and the choice is normally relatively open and formulated by the auditor.
- 72) Among the most uncontroversial sources of audit criteria are legislation, regulations, international agreements and binding standards issued by recognised authorities (see also *ISSAI 400 - Compliance Audit Principles* paragraph 13 and GUID 5201 paragraph 60).
- 73) The other main sources of criteria for environmental audits in the context of performance auditing are the measures and commitments adopted by the audited entity, including specific targets or requirements set by the relevant authorities.
- 74) Where the entity has adopted meaningful and specific measures like Environmental Impact Assessments, Strategic Environmental Assessments, Life Cycle Assessments, or environmental performance indicators for assessing its own performance, those relevant to the audit should be reviewed to ensure that they are reasonable and complete¹.
- 75) Generally accepted criteria can also be obtained from sources such as professional associations, recognised bodies of experts, and academic literature.

1 *ISO 14044: Environmental management -- Life cycle assessment - Requirements and guidelines*

- 76) If criteria are not available from the above sources, the auditor can focus on performance achieved in comparable organisations, best practices determined through benchmarking or consultation, or criteria developed by the auditor through an analysis of activities¹.
- 77) Where criteria are not self-evident and are capable of dispute by the audited entity, they should be agreed so far as possible in terms of their relevance and acceptability. This approach recognises that the audit is not simply searching for deficiencies to report.
- 78) If suitable criteria cannot be determined and agreed, the detailed audit question may need to be reconsidered. In the event that a disagreement persists, the audit report needs to explain the audit criteria used and why it was appropriate for the audit.

D.3. PERFORMANCE INDICATORS IN ENVIRONMENTAL AUDIT

- 79) The basic principles of environmental indicators applicable to management systems refer to comparability, continuity, clarity, timeliness and balanced presentation. Indicators should enable a comparison and show changes in environmental performance, be clear and understandable, be based on the same criteria, and should be measured over comparable time periods and in comparable units. Consequently, indicators need to be updated frequently enough to allow action to be taken and present balance between problematic and prospective areas.
- 80) Examples of sources from which environmental performance criteria can be derived include current and past performance; legal requirements; recognised codes, standards and best practices; performance data and information developed by industrial and other sector organisations; management reviews and audits; the views of interested parties and other stakeholders, as well as scientific research.
- 81) Environmental indicators are defined for evaluating and reporting the environmental performance of an organisation. The following categories

1 ISSAI 300, paragraph 27

of environmental indicators have become widely accepted and may be considered during an environmental audit: key performance indicators measuring air pollution and other emissions, waste, water, biodiversity and ecosystem services, etc.

- 82) Undertaking appropriate measures to ensure the management of environmental aspects by applying Management Performance Indicators (MPIs) for example, can be used to track the implementation and effectiveness of various environmental management programmes, as well as management actions addressing the environmental performance of the organisation's operations, and possibly the condition of the environment. More information on these indicators is provided under ISO Environmental Management Standards, i.e. Environmental Management Systems (ISO 14001, currently under revision and to be published in September 2015); Life Cycle Assessment (ISO 14040; ISO 14044), etc.
- 83) Operational performance indicators (OPIs) should provide management with information on the environmental performance of the organisation's operations (see ISO 14031). OPIs relate to:
- inputs (materials, e.g. processed, recycled, reused or raw materials; natural resources), energy and services;
 - supply of inputs to the organisation's operations;
 - the design, installation, operation (including emergency events and non-routine operation), and maintenance of the physical facilities and equipment of the organisation;
 - outputs: products (e.g. main products, by-products, recycled and reused materials), services, wastes (e.g. solid, liquid, hazardous, non-hazardous, recyclable, reusable), and emissions (e.g. emissions to air, effluents to water or land, noise, vibration, heat, radiation, light) resulting from the organisation's operations;
 - the delivery of outputs resulting from the organisation's operations.

D.4. COLLECTING AND ANALYSING DATA AND INFORMATION

- 84) The data needed to support findings and conclusions may need to be collected from corroborative sources, i.e. supplementary evidence provided to strengthen or confirm the principal evidence. The auditor may use information from databases, or rely on the results of the work of others, in assessing compliance with regulatory requirements, or in evaluating the effectiveness of corrective measures. Such data can be an efficient primary source of information for audit findings – reducing the time and resources needed to perform data collection and analysis, and alleviating the need for expensive field visits to diverse locations.
- 85) Any conclusions drawn from databases are only as good as the quality of the information itself. The audited entity has primary responsibility for ensuring that it has management information systems in place to collect data on its operations and performance.
- 86) For example, some SAIs' audits have detected major flaws in the information systems used to track environmental compliance. It is therefore essential to understand and, if possible, to establish the reliability of the data used for testing compliance. In relying on such systems, some SAIs routinely disclose in their reports the extent to which the databases' accuracy has been independently verified. In this case, the flawed information system could itself become a subject of the audit.
- 87) The quality and completeness of data characterising environmental conditions (e.g. pollutant levels of bodies of water; trends in fish populations) may be even more problematic than data on environmental regulatory compliance. While gathering data on environmental conditions is typically the responsibility of the audited entity and not the SAI, the SAI may nonetheless need the information to understand the extent of the problem and the effectiveness of measures to control it. Incomplete or poor quality data however, does not preclude the auditor from providing a useful analysis and information (see Audit Case13).

Box 13. AUDIT CASE 13: Data and environmental audits

One of the challenges in conducting environmental audits is insufficient data on the environment and gaps in monitoring and reporting systems. INTOSAI WGEA published a paper in 2013 that discusses the main ways that SAIs use environmental data and sources of environmental data¹.

The paper also provides ideas for SAIs when high-quality environmental data are lacking. Case studies include examples such as the audit on mining activities in Colombia, where data about water was gained by analysing environmental data but also by physically inspecting 27 mines to check on current conditions. Site visits were also used by the SAI of Bhutan to complement interviews when the SAI realized that the data from the waste management records of municipalities were incomplete or absent.

- 88) One issue that will likely become more topical in the future is that of open data, where government data is increasingly becoming available to the public. Open data provide preconditions for interested individuals and groups to get involved in following government spending or quality of the environment. This raises the requirements on auditors, to conduct high-quality audits that provide high added value.
- 89) The auditor can choose to obtain external expertise. External experts can be used to assist in all elements of designing and carrying out the audit. For instance, experts can assist in completing data or in analysing the data gathered, or simply in identifying commonly used evaluation methodologies. In order to frame the request for expert advice and to understand the advice obtained, the audit team should have, at a minimum, an adequate core competence in the subject matter in question (see international auditing standards²).
- 90) Experts can be academics specialising in a relevant field, and can also be key stakeholders such as resident groups in the area affected by the activity, key environmental interest groups, and non-governmental organisations in the field. In any case, the nature and quality of the data, opinions, and judgements

1 INTOSAI WGEA (2013) <http://www.environmental-auditing.org/LinkClick.aspx?fileticket=kFigAxPxT1Q%3d&tabid=128&mid=568>

2 ISSAI 140 - Quality Control for SAIs; Appendix 6 of ISSAI 3000

obtained from each of these different parties needs to be appropriately assessed by the auditor for its evidential value. This is particularly important when the source can have an interest in the outcome of the audit.

- 91) An alternative to using an external expert may be to convene a whole panel of experts. Such panels, including experts from industry, government and environmental organisations, have been used by some SAIs to help in identifying environmental audit priorities, developing audit approaches on specific issues and collecting information. The following audit case is an example of using external expertise for audit purposes.

Box 14. AUDIT CASE 14: Using experts' knowledge

SAIs have contracted expert(s) for specific tasks in situations where they need some specific advice.

As an example, SAI of Finland invited leading Finnish climate policy scientists to a focus group discussion in order to help in scoping the audit on climate strategy³.

As another example, the SAI of Sweden contracted a professor in law to clarify the relationship between Swedish and EU law when conducting a fisheries audit⁴.

In its final report of the audit strategy Sustainable development – climate, SAI of Sweden also contracted a professor of economics and a former professor of political science as external quality assurers of the audit report⁵. Experts of good repute add important credibility to a report.

- 92) Given the nature of environmental audits, co-operation between auditors in two or more countries may be useful. Coordinated audits of specific matters can be fruitful approaches, because the environmental problems are cross-border in nature. Additionally, there are many international agreements to which governments are signatory parties. These agreements can form a useful framework for the common audit approach. They can also provide a useful basis for formulating audit criteria. *GUID 5203 - Cooperation on Audits*

3 NAOF (2012). *Finnish Climate Change Policies – A Summary of Audits (2012)*. http://www.e-julkaisu.fi/vtv/finnish_climate_change_policies

4 Riksrevisionen (2008). *The central Government's actions for sustainable fisheries*. http://www.riksrevisionen.se/PageFiles/14080/RIR%202008_23%20The%20central%20Governments%20actions%20for%20....pdf

5 http://www.riksrevisionen.se/PageFiles/18628/RiR_19_rapport_ENG_anpassad.pdf

of *International Environmental Accords* explains how SAIs might cooperate while auditing international environmental accords. INTOSAI WGEA has also published together with the UNEP a primer about auditing the implementation of Multilateral Environmental Agreements. An example of cooperative audit in the area of sustainable fisheries is provided below.

Box 15. AUDIT CASE 15: Examples of cooperative audits

A number of cooperative audits have been carried out by SAIs around the world. European countries conducted a cooperative audit on the enforcement of the EU Waste Shipment Regulation, which has been set up to prevent illegal shipment or dumping of hazardous waste⁶. Russia and Estonia conducted a parallel audit of conservation activities concerning Lake Peipus belonging to both countries. There has even been global coordinated audit about climate change⁷.

One example of how SAIs have systematically sought cooperation is in the Pacific region. In 2013, nine SAIs from the Pacific region finished their third cooperative audit⁸. It dealt with sustainable fisheries, especially tuna, because some tuna species are under stress in the Pacific owing to unsustainable fishing practices. Besides national reports assessing the effectiveness of the management of offshore fisheries, a high-level regional perspective was given in a regional overview report.

The audit was conducted as part of a Cooperative Audit Programme. The methodology included (1) scoping of the topic in the PASAI Regional WGEA, with expert assistance; (2) joint planning meeting for national audit teams with expert support and peer review; (3) individual audit work plans by audit teams; (4) field work of teams; (5) joint report meeting with expert support and peer review; (6) audit completion and reporting of national teams; (7) regional overview preparation, and (8) evaluation of success and preparation of next audit topic.

6 *Coordinated audit on the enforcement of the European Waste Shipment Regulation* (2013) http://www.eca.europa.eu/sites/cc/Lists/CCDocuments/other%20publications/Coordinated_audit_on_the_enforcement_of_the_European_Waste_Shipment_Regulation.pdf

7 *Coordinated international audit on climate change* (2010). <http://www.environmental-auditing.org/Home/FocusonClimateChange/GlobalAuditonClimateChange/tabid/245/Default.aspx>

8 *Pacific Regional Report of the Cooperative Performance Audit: Managing Sustainable Fisheries* (2013) http://www.environmental-auditing.org/Portals/0/AuditFiles/regional_report_sustainable_fisheries.pdf

The INTOSAI WGEA published in 2007 a collection of tips and examples for cooperative audits which is useful when planning cooperative audits. The most important tip is to communicate with all partners during all phases of the process!

D.5. ENSURING IMPACT OF ENVIRONMENTAL AUDITING

- 93) Ensuring impact is important for all audits but the nature of environmental auditing and environmental audit results makes specific guidance relevant.
- 94) If relevant and allowed, the environmental auditor should - as for all other performance audits - seek to provide recommendations as explained in ISSAI 3000. These should be linked to the audit objectives, findings and conclusions. Recommendations should be constructive, realistic, feasible and likely to contribute significantly to addressing the weaknesses or problems identified by the audit. When recommendations are considered early in the planning/analysis phase and discussed with experts and the entity, the chance of impact is bigger. Recommendations could concern for instance government operations lowering costs and simplifying administration, improving risk management, enhancing the quality and volume of services, or improving effectiveness, impact or the benefits to society.
- 95) Reporting and communicating the audit's results to its audience is critical to maximising the audit's impact. As the guidance on increasing the impact of environmental audits¹ suggests, SAI needs to ensure that their reports answer the following questions:
- "What?" - Identify the problems and their underlying conditions uncovered by the audit.
 - "So what?" - Explain why the reader should care about the audit findings.
 - "Why so?" - Identify the root cause of problems or observations.
 - "What next?" - Highlight the recommendations or solutions proposed.

1 *How to increase the impact of environmental performance audits.* http://www.ccaf-fcvi.com/index.php?option=com_content&view=article&id=1161%3Ahow-to-increase-the-impact-of-environmental-performance-audits-a-discussion-paper&catid=120%3Aperformance-audit-g-publications&Itemid=535&lang=en

The auditor should keep in mind that poor quality photographs that add no value – other than to prove that the auditors were really there – only serve to detract from the quality of a report.

- 96) Sometimes environmental audits are non-financial or intangible in the sense that possible problems materialise only after a long time span. This requires special attention to communicating results well. Sometimes the cause and the consequences of environmental incidents can be visualised dramatically with photos. Used well, photos can help make audit reports more attractive and interesting. They may assist in understanding the text, and illustrate ideas and observations in the report. To achieve the best effect by using photos in audit reports - as shown in the example below - the auditor should ensure that:
- The photo is illustrative, depicting the exact problem or incident described. Because of this the auditor must consider at an early stage in the audit – even before on the spot visits – how to obtain the photo;
 - The caption text guides the reader by explaining exactly what the photo illustrates;
 - The SAI has the rights to publish the photo and ensures that appropriate attribution is given.

The auditor should keep in mind that poor quality photographs that add no value – other than to prove that the auditors were really there – only serve to detract from the quality of a report.

Box 16. AUDIT CASE 16: The Danish efforts in the Arctic

In 2013, the SAI of Denmark published an audit on the Danish efforts in the Arctic area. The report used photos to visualise to the readers the problems identified in the audit. For instance, this photo shows a container ship run ashore just outside the coast of Greenland. The photo was accompanied by the following caption text: “In August 2012 a container ship went aground at the entrance to the Godthåbsfjord when trying to evade an iceberg. The episode illustrates the risks of sailing in Greenlandic waters. The area was covered by sea charts, which was approved for navigation by using GPS, and these charts were on board”.



Photo by Greenland Police, in the report “Beretning til Statsrevisorerne om Danmarks indsats i Arktis”

- 97) Effective communication with stakeholders can reinforce the audit messages and the impacts of audit work. As the ultimate beneficiaries of public funds, citizens are the most important stakeholders of SAIs. Audit results can be communicated by making presentations of results at conferences, parliamentary committees, journal articles, social media, etc. Directing these ways of communication at other actors than the typical stakeholder, for instance academics, lobbyists, NGOs, government agencies and think-tanks, will increase the debate and interest in the audit results and potentially strengthen the impact of the audit. On the other hand, SAI can promote stakeholder participation with mechanisms to receive and monitor complaints for non-compliance as well as suggestions for improving public administration – this can be done broadly for a specific report.

Box 17. INTOSAI 7th survey of environmental auditing

According to the INTOSAI's 7th survey of Environmental Auditing from 2012, 79% of the SAIs assessed that communicating results of environmental audits helps to increase the impacts of these audits. The survey identified that the top 3 means for communicating the results of environmental audits are publishing full audit reports online (55%), distributing printed versions of audit reports (53%) and issuing press releases (47%). A broad variety of communication methods are also used by the SAIs, such as press briefings, radio and television appearance, printed articles, and social networks.

- 98) Besides audits, SAI can conduct follow-up audits after some years after of the original audit. When entities are aware that follow-up audits might or will take place, they are more likely to resolve deficiencies and implement recommendations. For environmental audits in particular, the auditor may need to provide long term recommendations. It can thus take several years before the process of following up on the auditor's recommendations can begin (see audit case No 18).

Box 18. AUDIT CASE 17: Following up environmental audit results

In 2011, the National audit office of Finland audited climate and energy policies. The Kyoto Protocol expects the Parties of the Protocol to phase out fiscal incentives that run counter to the UNFCCC's objectives. Despite this expectation, NAOF found that the government had not comprehensively analysed spending that could harm the climate. According to the NAOF, such an analysis was necessary to improve the effectiveness and transparency of public spending. It would also allow decision-makers to better assess the effects of decisions in situations where policy goals conflict.

In a 2013 follow-up audit, NAOF found that the government had implemented its recommendation and identified environmentally harmful subsidies that totaled about four billion euros in 2011. For comparison, the climate-related spending over the same period was only 0.55 billion euros. More specifically, a government study found that the transportation sector received the largest share of the environmentally harmful subsidies (1.8 billion euros), followed by agriculture (1.1 billion euros), and the energy sector (700 million euros).