

**GUIDELINE:
AUDIT CONSIDERATIONS
FOR EXTRACTIVE
INDUSTRIES**

November 2019



African Organisation of English-speaking Supreme Audit Institutions

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List of abbreviations

| | |
|-----------|---|
| AFROSAI-E | African Organisation of English-speaking Supreme Audit Institutions |
| CAM | Compliance Audit Manual |
| CGT | Capital gains tax |
| DTA | Double taxation agreements |
| EI | Extractive industries |
| EIA | Environmental impact assessment |
| EITI | Extractive Industries Transparency Initiative |
| FAM | Financial Audit Manual |
| GAAR | General anti-avoidance rule |
| GFI | Global Financial Integrity |
| GHG | Greenhouse gas |
| IEA | Information exchange agreements |
| IFFs | Illicit financial flows |
| IOC | International oil company |
| ISSAIs | International Standards of Supreme Audit Institutions |
| MNE | Multinational entity |
| MSG | Multistakeholder steering group |
| NRGI | Natural Resource Governance Institute |
| OECD | Organisation for Economic Cooperation and Development |
| PAM | Performance Audit Manual |
| PSA/PSC | Production sharing agreement/contract |
| SAI | Supreme Audit Institution |
| SDG | Sustainable Development Goals |
| SOE | State-owned enterprise |
| TP | Transfer pricing |

1. Purpose and use of the Extractive Industries Guideline

The auditing of extractive industries (EI) has received increased attention in the past years, both within the INTOSAI community and in other international fora. Strong and effective Supreme Audit Institutions (SAIs) can contribute to better and more transparent oversight of extractive industries and help to ensure that governments manage natural resources in the best interest of the public. There are several initiatives¹ to strengthen SAIs' ability to fulfil this function.

This *Guideline on Audit Considerations for Extractive Industries* is AFROSAI-E's initiative and contribution that can assist the SAIs in the process of auditing the extractive industries and strengthen SAIs' ability to fulfil this function.

A country's natural resources, such as oil, gas, metals and minerals, belong to its citizens. Extraction of these resources can lead to economic growth and social development. However, poor governance of natural resources has often led to corruption and conflict. More transparency and public scrutiny of how wealth from a country's extractive sector is used and managed is necessary to ensure that natural resources benefit all.²

About 3.5 billion people live in countries rich in petroleum (oil and gas) or minerals. With good governance and transparent management, the revenues from EI can have an impact on reducing poverty and boosting shared prosperity, while respecting community needs and the environment.³

Before we can move on to the purpose of this guideline, it is important to have a common understanding of the meaning of the expression *extractive industries*.

Definition of extractive industries:⁴ Any process that involves the extraction of non-renewable resources. The extractive industry consists of any operations that remove oil, gas, metals, minerals and aggregates from the earth and/or sea. Three important features characterise these industries:

- Permission to extract/exploit a limited natural resource gives opportunity to generate superprofit (monopoly/oligopoly). Most countries adhere to the principles that limited natural resources belong to the government/people and hence the lion's share of the generated superprofit.
- Extraction of petroleum and minerals involves high costs, advanced technology and high risk.
- The commodities extracted can be sold in a global market, thus creating a risk of tax evasion including use of transfer pricing.

Because of these unusual characteristics, and the way petroleum and minerals differ from extraction of other natural resources, they are the sole focus of this guideline. In addition, relevant international bodies such as the Working Group on the Audit of Extractive Industries (WGEI), World Bank, Extractive Industries Transparency Initiative (EITI) and Natural Resource Governance Institute (NRGI) limit their definition of extractive industries to petroleum and minerals.

1.1. Purpose

The purpose of this guideline is to assist SAIs mandated with auditing the public sector management of extractive industries with capacity building, understanding the sector, mapping the sector and conducting risk assessment along AFROSAI-E's EI value chain.

¹ INTOSAI's Working Group on the Audit of Extractive Industries (WGEI) is an example of such initiative, ref. wgei.org

² Source: eiti.org.

³ Source: [Wordbank.org](http://wordbank.org).

⁴ This definition is in line with the definition from EITI, which states that extractive industries "usually refers to the oil, gas and mining industries". Source: eiti.org.

In terms of their mandate, SAIs are required to give assurance on the information reported, and audit the systems, processes and actual collections of revenue relating to natural resources. SAIs also play an important role in assuring the accountability of government institutions involved in regulating and monitoring EIs. These responsibilities require an understanding of concepts related to EI, country-specific environments and international good practices.

Extractive industries are important to government auditors because an endowment of natural resources can have a significant impact on a country and requires a great deal of regulation and a highly skilled bureaucracy to manage those regulations.

The guideline is designed to provide background information, examples and illustrations relating to the public sector auditor's areas of interest in countries that have an extractive sector with significant profit sharing between government and private sector. The guideline is designed to meet the following objectives:

1. To inform the users on the latest developments, trends and initiatives in the EI sector;
2. To serve as the backbone of the development of AFROSAI-E's e-learning program on EI sector audits;
3. To act as both an informer and a tool for SAIs in the audit of the EI sector.

The extractive industries are generating vast amounts of revenue in Africa, but only a fraction is ploughed back to the benefit of the citizens. How can the SAIs contribute to good governance and sustainable development of their countries?

In line with ISSAI 12, SAIs need to be able to add value to society and make a difference in the lives of citizens by carrying out audits of the EI sector. To ensure that elected officials act in the best interests of the citizens they represent, governments and public sector entities need to be accountable for their stewardship over, and use of, public resources. SAIs strengthen accountability, transparency and integrity by independently auditing public sector operations and reporting on their findings.

Accountability and transparency are two important elements of good governance. Transparency is a powerful force that, when consistently applied, can help fight corruption, improve governance and promote accountability. The concept of accountability refers to the legal and reporting framework, organisational structure, strategy, procedures and actions to help ensure that the SAIs meet their legal obligations regarding their audit mandate and required reporting within their budget.

1.2. Structure

Extractive industries form a very wide and extremely technical industrial sector.

To meet the purpose as stated above, this guideline is structured into four main chapters and annexures as follows:

| Chapter | Description | Main features |
|---------|--|--|
| 1 | Purpose and use of the Extractive Industries Guideline | Introduction to extractive industries, definition of EI, purpose and structure of this guideline. How the auditor should use this guideline. Background on the EI sector in Africa. |
| 2 | AFROSAI-E tools for public sector audit of EI | Introduction to the role of a SAI in the EI sector and how the SAI can fulfil its mandate. AFROSAI-E's generic value chain model for the extractive industries is also introduced together with the risk assessment framework, as tools that the auditor |

| Chapter | Description | Main features |
|---------|--|---|
| | | can use to meet the SAI's mandate in the EI sector. |
| 3 | Audit focus areas along the EI value chain | This is the main chapter of the guideline. It maps the audit risk assessment activities of a SAI auditor, both at national and audit engagement level, along the EI value chain and its respective processes. Each section contains audit considerations as an epilogue. |
| 4 | Other risk areas and relevant audit considerations in EI | Risks associated with the EI sector are highlighted, discussed and assessed, together with how the SAI auditor can respond to such risks from an audit perspective. |
| Annex | Description | Main features |
| 1 | Background on the EI sector | A detailed background on the main features of the oil, gas and solid mineral mining environment based on extensive research. The annex gives both current and future perspectives of developments in the industry through various examples from the African continent and also covers artisanal mining. |
| 2 | Key regional and international initiatives in the EI sector | An introduction to credible regional and international institutions in the EI sector available for the auditor to obtain audit-related information and data. |
| 3 | Mapping Sustainable Development Goals (SDGs) and Agenda 2063 to EI | The mapping facilitates a shared understanding of how EI most effectively supports the achievement of the SDGs and the 2063 Agenda and how the SAI's audit role fits into this picture. |

1.3. How SAI auditors should use this guideline

Auditors should use this guideline depending on the nature and scope of the audit to be undertaken. The guideline, throughout its various chapters, assists the auditor to determine the nature of the audit to be undertaken. This is achieved by identifying and responding appropriately to identified risks. By using the templates in chapter 2, the auditor can document the risk assessment and responses sufficiently, both at national and engagement level. Depending on the subject matter and risk assessment, the EI audits may be conducted as performance audits, compliance audits or financial audits. In addition, considerations highlighted in chapter 3 of this guideline relating to EI should also be taken into account.

Most SAIs audit the financial statements of government entities annually. When such financial statements include revenue and/or expenditure relating to EI these amounts should be identified for audit. During the audit of financial statements, the provisions and templates of the Financial Audit Manual (FAM) should be followed. Likewise, compliance audit or performance audit methodology should be applied when relevant by following the audit steps (planning, executing and reporting) and templates provided in the Compliance Audit Manual (CAM) and Performance Audit Manual (PAM).

1.4. Background on the extractive industry sector

1.4.1. Extractive industries

As mentioned earlier, extractive industries in the context of this guideline refer to the petroleum and mining sectors. The following paragraphs highlight key information on the sectors and the latest developments in Africa.

Petroleum⁵

Oil and natural gas are *hydrocarbons*, strings of carbon and hydrogen formed from organic material compressed over millions of years. Generally, oil and natural gas are referred to together as **petroleum**. They are often located together. If a reservoir (area underground) has only gas and no oil, it is called non-associated gas. If a reservoir contains both oil and gas, the gas it contains is called associated gas. What is extracted is not often a form of petroleum that can be used right away. For it to be the fuel that can go into a car or be converted into plastics, it must go through a process of refining. For the purpose of getting a basic understanding and selection of audit subject matters, let's look at the overall life cycle of the petroleum.

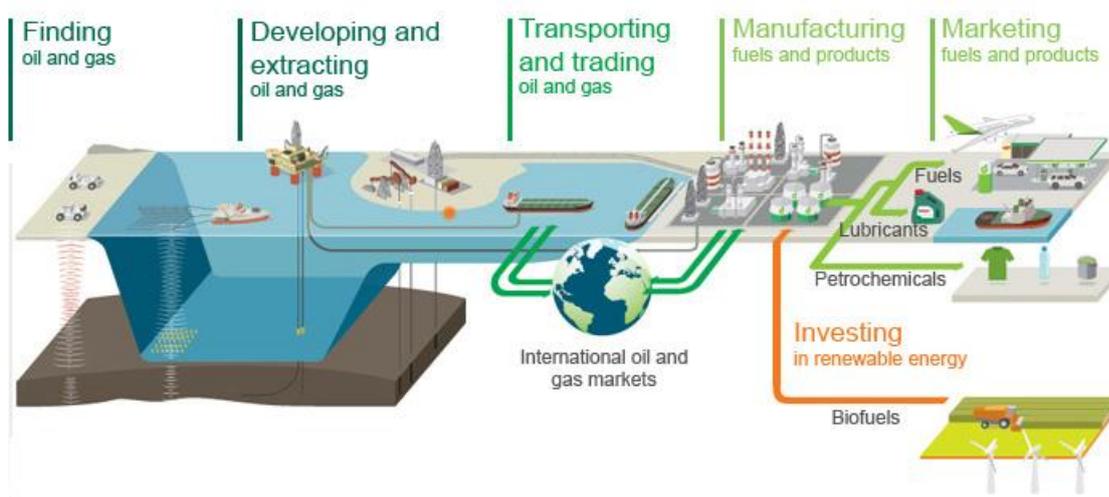


Figure 1: Petroleum process life cycle

Upstream and downstream are different parts of the process of getting petroleum from out of the ground and to the market. Upstream includes the exploration and extraction phases. Downstream includes refining, marketing and end use. Transportation between upstream and downstream is often referred to as midstream.

Mining

Mining is the extraction of minerals from the earth. Mining can either be large-scale, small-scale or artisanal. *Large-scale mining* is often undertaken by big corporations using sophisticated equipment and a huge labour force. The mining operations take place at large sites and continue until the mineral or metal is completely excavated. *Artisanal mining* refers to mining by individuals, groups, families or cooperatives with minimal or no mechanisation, often in the informal sector of the market. Artisanal and small-scale mining generate about 15% of the world's nonfuel minerals, yet are major sources of income to about 100 million people globally.

⁵ *The Oil and Gas Industry*. NRG Reader. April 2015

Much audit focus has been concentrated on large-scale mining, yet statistics indicate that more people, globally and in Africa, are involved in artisanal mining. Artisanal mining faces various challenges due to mining in the informal sector with little or no mechanisation and minimal to no regulation. Large-scale mining is usually well organised and has potentially fewer risks compared to artisanal mining. **Annex 1** identifies areas in artisanal mining on which auditors can focus their audits depending on the risk assessment.

The mining process begins with exploration and the discovery of mineral deposits, and continues through ore extraction and processing to the closure and remediation of worked-out sites.



Figure 2: The mining process lifecycle⁶

It is fundamental for auditors to understand the mining lifecycle and activities involved in each stage in order to identify areas where they can conduct audits that would lead to proper management of the mining sector in their respective countries.

1.4.2. Extractive industries in Africa

Africa alone holds around 30% of the world’s mineral reserves, 10% of the world’s oil reserves and 8% of the world’s natural gas reserves.⁷ The EI sector therefore serves as a major source of revenue in many African countries, playing a crucial role in terms of economic, social and environmental aspects. Today, there are still undiscovered resources in the African region as well as a need to build the capacity of institutions to ensure that citizens benefit from the country’s natural resources.

In the early 2000s, an increase of discoveries throughout the African continent emerged. Barely a month goes by without a new discovery of either oil or mineral resources in Africa. Only five of the continent’s 55 countries are neither producing nor exploring for oil and minerals. Improvements in exploration technology and economic stability in Africa have induced oil and gas companies to begin exploring in the region.⁸ The oil and gas industry in Africa continues to show substantial growth.

⁶ CAAF Guide to Auditing Mining Revenues and Financial Assurances for Site Remediation, July 2017

⁷ World Bank: <https://www.worldbank.org/en/topic/extractiveindustries/overview>

⁸ *The Oil and Gas Industry*. NRG Reader. April 2015

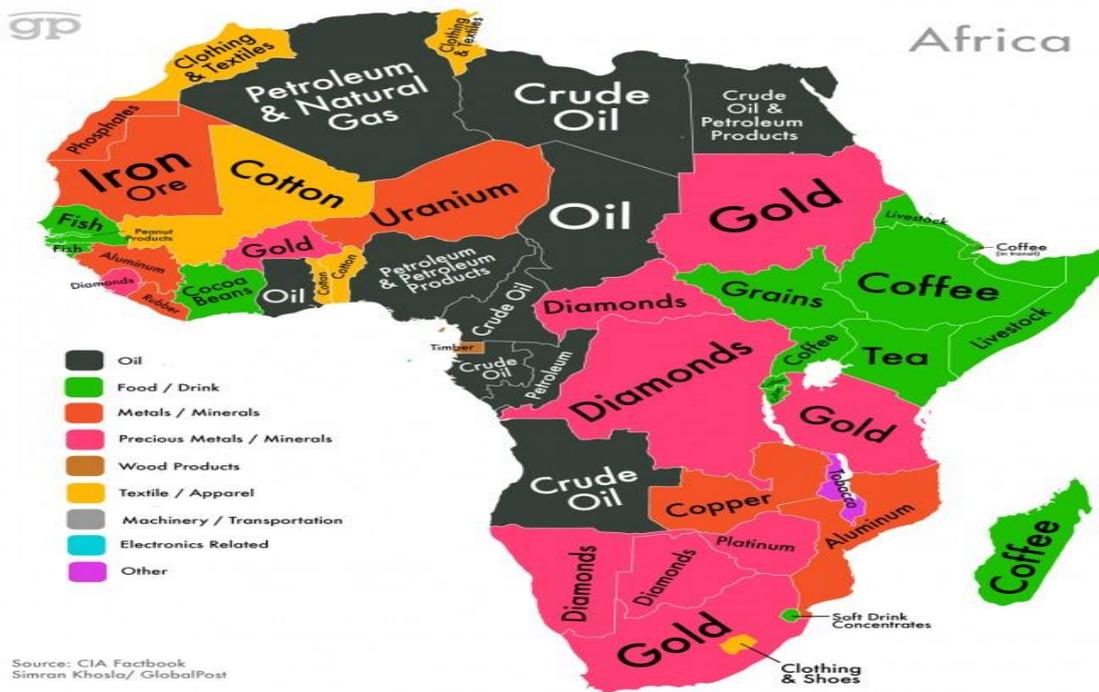


Figure 3: Extractive industries in Africa⁹

A resource bonanza is in train across the continent, generating big government revenues and real benefits for Africans.

The endowment of natural resources imposes some implications and challenges for the resource-rich countries. In emerging petroleum- and mineral-producing countries, there is an ongoing process to design the management of the sector, i.e. establishing a new legislative framework governing the sector as well as new agencies, acquiring technologies and relevant competence. In many cases, the challenges in EI are geopolitically driven. Moreover, price fluctuations are crucial to consider because they affect resource revenues and the direction of the industry. **Annex 1** provides a detailed background on the main features of the petroleum and mining environment and describes current and future perspectives of developments in the industry through various examples from the African continent.

⁹ Al Jazeera: <https://www.aljazeera.com/indepth/interactive/2016/10/mapping-africa-natural-resources-161020075811145.html>

2. Public sector audit of extractive industries

2.1. Introduction

As per ISSAI 100.17, the public sector audit environment is that in which governments and other public sector entities exercise responsibility for the use of resources derived from taxation and other sources in the delivery of services to citizens and other recipients. These entities are accountable for their management and performance, and for the use of resources, both to those that provide the resources and to those, including citizens, who depend on the services delivered using those resources. Public sector auditing helps to create suitable conditions and reinforce the expectation that public sector entities and public servants will perform their functions effectively, efficiently, ethically and in accordance with the applicable laws and regulations.

The mandate of the SAI normally dictates the type of audits that should be performed and at the same time provides freedom for the SAI management to decide on auditing specific areas and topics.

Financial audit focuses on determining whether an entity's financial information is presented in accordance with the applicable financial reporting and regulatory framework. This is accomplished by obtaining sufficient and appropriate audit evidence to enable the auditor to express an opinion as to whether the financial information is free from material misstatement due to fraud or error. Annual financial audits involve the financial statements of government entities (ministries, directorates and agencies). Financial statements of these entities will include revenue collected from EI, disclosed by using either the cash or accrual basis of accounting. Financial auditors are required to attest to the credibility of disclosed financial information.

Performance audit focuses on whether interventions, programmes and institutions are performing in accordance with the principles of economy, efficiency and effectiveness, and whether there is room for improvement. Performance is examined against suitable criteria, and the causes of deviations from those criteria or other problems are analysed. The aim is to answer key audit questions and to provide recommendations for improvement. Performance audits can cover several themes in the EI sector. Possible themes are: Do the environmental agencies carry out their tasks in an effective manner? Is the revenue authority efficient in its assessment of petroleum tax revenue?

Compliance audit focuses on whether a subject matter is in compliance with authorities identified as criteria. Compliance auditing is performed by assessing whether activities, financial transactions and information are, in all material respects, in compliance with the authorities that govern the audited entity. These authorities may include policies, laws and regulations, budgetary resolutions, established codes, agreed terms or the general principles governing sound public-sector financial management and the conduct of public officials. Possible themes are: Is the allocation of exploration and production licences carried out in accordance with the laws and regulations? Is the assessment and collection of revenues from EI companies carried out in accordance with the legal framework? Do the revenue authorities reconcile the revenue flows from the EI sector in accordance with the legal framework?

2.2. AFROSAI-E's value chain model for extractive industries

SAIs form part of an overall legal and constitutional system within their respective countries and are accountable to Parliament and the public. SAIs are also responsible for planning and conducting the scope of their work and using proper methodologies and standards to ensure that they promote accountability and transparency in public activities, meet their legal mandate and fulfil their responsibilities in a complete and objective manner.¹⁰

For SAIs to efficiently and effectively audit the EI sector, auditors need to understand the concept of the EI value chain. AFROSAI-E'S EI value chain comprises seven steps, some of which are interrelated, as illustrated in figure 4. AFROSAI-E has developed and updated the generic EI value chain to assist auditors in understanding and identifying potential risks in each step.

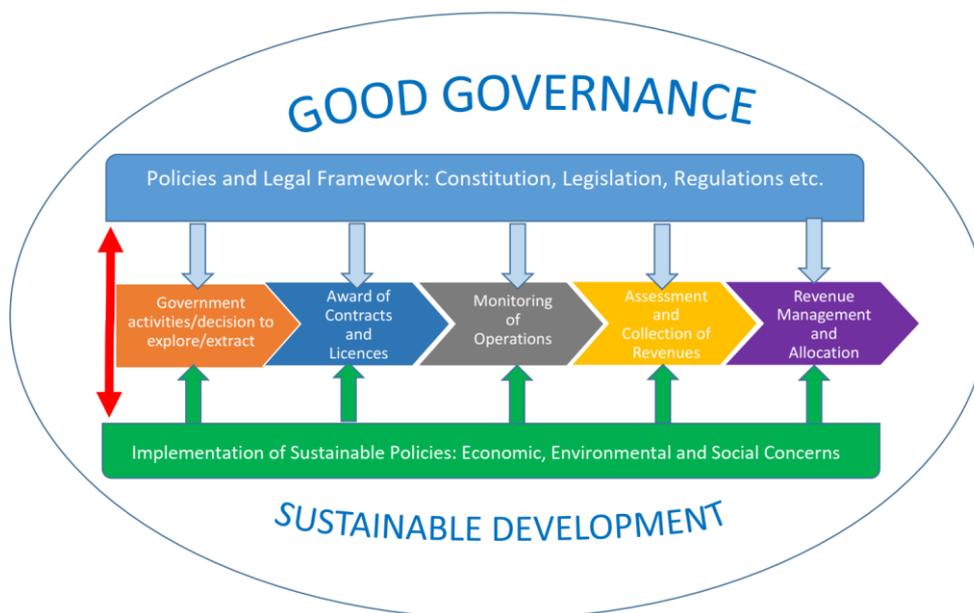


Figure 4: AFROSAI-E'S generic value chain for the extractive industries

A SAI may decide to focus audit attention by identifying audit subjects relating to EI. The audit subject may cover one or more of the seven elements of the EI value chain. To facilitate this type of approach, chapter three provides a holistic overview of each of the seven elements with explanations of typical issues, risks, controls and related audit programmes. Auditors should keep in mind that the seven elements described in chapter 3 form part of a single process. Auditors are then expected to respond to the risks through either financial, performance or compliance audits. The risk identification tool is covered in chapter 2.3.

Note: Generic risks and controls identified in this guideline should not under any circumstances be seen as complete. In each audit, the relevant legislative framework and contracts will determine additional or alternative controls which should be considered during the audit. The templates in this guidance are meant to be used as a starting point and they should be amended where necessary to suit the audit objectives and the audited environment.

The EI generic value chain is applied to map the EI sector and to assess risks along the value chain's steps as explained in chapter 3.

¹⁰ ISSAI 20 Principles of transparency and accountability.

2.2.1. Good governance

“Governance” in the extractive industries is a term commonly used to refer to how public institutions and private companies conduct their affairs and manage resources.¹¹ It covers the process of decision-making as well as the processes by which decisions are implemented. Transparency and accountability are central to the concept of “good governance”. Disclosure of information and transparent decision-making processes enable citizens and other stakeholders to scrutinise actions and hold governments and other stakeholders such as companies to account for their activities in the EI sector. This section of the guideline aims to give the auditor an insight into the principles and functions of good governance in the extractive industries, as they are a fundamental consideration in audit risk assessment in conjunction with the nine principles of ISSAI 20, “Principles of transparency and accountability”.

Within the AFROSAI-E member country region, the substantial solid mineral, oil and gas resources are key to generating wealth and creating a sustainable economy and positive long-term human development. As such, governments and citizens are concerned about dependence on volatile EI revenues, and commodity prices that have both raised the stakes and increased public expectations. The difficulties of managing EI revenues efficiently and fairly, the requirements of economic liberalisation and pressure from evolving international standards have all contributed to an increasing focus on the good governance of the EI sector and how it performs its role in the economy.

Audits along the EI value chain can contribute significantly to the promotion of good governance. In line with ISSAI 20, accountability and transparency are two important elements of good governance which can be considered when performing audits in the EI sector. Transparency is a powerful force that, when consistently applied, can help fight corruption, improve governance and promote accountability.¹² As the auditor performs the audit, they should take into consideration the requirements of good governance of the EI sector. The Chatham House Document¹³ presents five principles of good governance that should guide organisation and practice in the EI sector. Although the Chatham House Document was specifically written for the national oil and gas sector, these principles are valid for the entire EI sector.

The principles of good governance

Five high-level principles of good governance were developed by Chatham House. Auditors may consider these when developing criteria, measures and expectations that form the basis of the good governance guidelines in the EI sector:

- Clarity of goals, roles and responsibility;
- Sustainable development for the benefit of current and future generations;
- Enablement to carry out the role assigned;
- Accountability of decision-making and performance;
- Transparency and accuracy of information.

¹¹ www.icmm.com

¹² ISSAI 20, Principles of transparency and accountability.

¹³ *Report on Good Governance of the National Petroleum Sector*, Chatham House, April 2007

Good governance indicators

Various models for assessing the levels of governance in specific countries are available to the auditor for consideration when obtaining an understanding of the operating environment of the EI sector. For the year 2017, AFROSAI-E member countries show increasing divergence in overall governance performance according to the Ibrahim Index of African Governance (IIAG) 14; the Corruption Perception Index (CP) of Transparency International¹⁵ and the country scores and rankings of the Resource Governance Index (RGI). Table 1 lists the AFROSAI member countries' scores for these indices. Also refer to annex 5.2, ch. 5.2.1, on the NRG and annex 5.4 on useful links.

Table 1: AFROSAI-E member countries' scores for different governance indices

| Country | Score out of 100 (100 = best) | | |
|--------------|-------------------------------|------|------------------|
| | CP | IIAG | RGI |
| Angola | 19 | 38 | 35 |
| Botswana | 61 | 69 | 61 |
| Eritrea | 24 | 29 | 10 |
| Ethiopia | 34 | 47 | 40 |
| Gambia | 37 | 55 | N.A. |
| Ghana | 41 | 68 | 67 (oil and gas) |
| | | | 56 (mining) |
| Kenya | 27 | 60 | N.A. |
| Lesotho | 41 | 57 | N.A. |
| Liberia | 32 | 52 | 44 |
| Malawi | 32 | 56 | N.A. |
| Mauritius | 51 | 80 | N.A. |
| Mozambique | 23 | 51 | 50 |
| Namibia | 53 | 69 | N.A. |
| Nigeria | 27 | 48 | 42 |
| Rwanda | 56 | 64 | N.A. |
| Seychelles | 66 | 73 | N.A. |
| Sierra Leone | 30 | 51 | 46 |
| Somalia | 10 | 14 | N.A. |
| South Africa | 43 | 68 | 57 |
| South Sudan | 13 | 19 | 32 |
| Sudan | 16 | 31 | 21 |
| Swaziland | 38 | 49 | N.A. |
| Tanzania | 36 | 59 | 53 (oil and gas) |
| | | | 49 (mining) |
| Uganda | 26 | 55 | 44 |
| Zambia | 35 | 56 | 50 |
| Zimbabwe | 22 | 45 | 29 |

IIAG: Ibrahim Index of African Governance (2017)
RGI: Resource Governance Index (2017)
CP: Corruption Perception Index (2018)

¹⁴ <http://mo.ibrahim.foundation/news/2018/african-countries-show-increasing-divergence-overall-governance-performance/>

¹⁵ https://www.transparency.org/news/feature/corruption_perceptions_index_2017

2.2.2. Steps in the EI value chain

The following gives a short summary of the value chain:

1. Policies and legal framework: The government needs to establish a hierarchy of laws, regulations and policies that shall govern the EI sector. There should be consistency between these sources of law, and they should cover all aspects of government activities in the extraction process.
2. Government activities/decisions to explore/extract: The legislative branch of government needs to make policy decisions on whether to open up areas for exploration, based on recommendations by the executive. There should be indications of possible reserves, environmental impact assessments are carried out and relevant government institutions are established. If the exploration indicates potential for substantial natural resources then the government might decide to extract.
3. Award of contracts and licences: The government needs to decide on a fiscal regime which shall regulate the EI operations, use of contracts or law. Should there be competitive bidding among international petroleum/mining companies?
4. Monitoring of operations: After production has commenced, the government should monitor the companies' activities in a number of areas, including Health, Safety, Environment (HSE), production volume, work programme etc.
5. Assessment and collection of revenues: Government needs to effectively manage various sources of EI revenue. Revenue may be collected through various instruments such as royalties, taxes, bonuses, shareholding etc. Some of these instruments are susceptible to tax evasion, which needs to be addressed by competent revenue authorities.
6. Revenue management and allocation: After EI revenue has been collected, government needs to allocate this for different purposes. Revenue could either be used for spending purposes in the next year's budget, or be saved for future generations.
7. Implementation of sustainable policies: The extractive industries also have the potential to do harm. Therefore, government needs to make sure that the activities benefit local business and do not lead to environmental damage or non-sustainable overspending etc. The extractive industries should benefit society by more than just the revenue generated by the sale of commodities. Provision should also be made for decommissioning, by ensuring that adequate resources are allocated for this purpose.

2.2.3. Sustainable development

The activities and revenues from the EI sector as described in the EI value chain in figure 4 should lead to sustainable development of the resource-rich countries. Sustainable development means a holistic approach to our society, which takes into account not only the desire for economic development including local content, but also social inclusion and environmental sustainability.

Sustainable development meets the needs of the present without compromising the potential of future generations to meet their own needs. Sustainable development is about integrating the goals of a high quality of life, health and prosperity with social justice, and maintaining the earth's capacity to support life in all its diversity at present without compromising the potential of future generations.¹⁶

Security, accountability and good governance are of intrinsic value and important in facilitating economic development in all countries. Research shows that resource wealth has a positive effect on growth in countries with good institutions, but a negative effect on those with poor institutions.¹⁷

Government institutions have a leading role to play in this regard. Some of the situations where government exercises this role is in crafting adequate and suitable legal framework, monitoring the

¹⁶ <https://miningwithprinciples.com/>

¹⁷ EU Working Paper: Natural Resources and State Fragility RSCAS 2010/36.

activities in the EI sector, and ensuring that the correct amount of revenue is collected and allocated to activities that lead to sustainable development, such as education, health, infrastructure development and protection of the environment.

The SAIs' role is to audit whether governments through the ministries, agencies and state-owned companies are following up on what is expected of them. The SAIs should have a holistic approach to auditing by mapping the EI sector, identifying the various role players, assessing the risks along the value chain (especially focusing on the areas where the risk is high) and ensuring that they conduct relevant audits. By auditing the EI sector the SAIs can contribute to raising more awareness and conducting audits that will benefit the citizens of the natural resource-rich countries.

2.3. Conducting a risk assessment along the EI value chain

Risk is the probability that incidents may occur and affect the achievement of objectives negatively. ISSAI 20, Principle 3 requires SAIs to communicate the scope of audit activities that they undertake under their mandate, based on their risk assessment and planning processes. Risk assessment in the EI sector involves a systematic process of evaluating country-specific potential risks for each step in the EI value chain. The risks are identified from an audit perspective, as SAIs are eventually expected to identify audits that need to be performed in order to respond to the identified risks.

The identification of key players is an essential part of the risk assessment process, as it ignites the process of identifying potential auditees where the auditor has the jurisdiction to perform risk-based audits in line with the ISSAIs. The identification of key players includes the following corroborative questions:

- o Who are the key players in the sector?
- o How are they involved in the sector?
- o When are their roles required?
- o What are their risks in the sector?
- o What are their key financial interactions/transactions?

Template 1 may assist the auditor in both mapping the EI sector in the country and initial identification of the risks.

Template 1: Risk identification matrix

| Sector: | | | | | Date last updated: | | |
|---------------------------------|------------------------------|---|---------------------------------|--------------------------|---------------------------------------|-----------------------------------|--|
| Prepared by: | | | | | Reviewed by: | | |
| Value chain/ Risk management | Policies and legal framework | Government activities/ decision to explore/ extract | Award of contracts and licences | Monitoring of operations | Assessment and collection of revenues | Revenue management and allocation | Implementation of sustainable policies |
| Government activities | | | | | | | |
| Government entity(ties) | | | | | | | |
| Other stakeholders | | | | | | | |
| Risk factors/ indicators | | | | | | | |
| Risks | | | | | | | |

| | | | | | | | |
|---------------------------|--|--|--|--|--|--|--|
| Controls addressing risks | | | | | | | |
|---------------------------|--|--|--|--|--|--|--|

KEY:

Risk factor/indicator: A condition, attribute, characteristic that increases the likelihood of a risk, for instance, lack of transparency in awarding contracts.

Risk: The fact that incidents may occur and affect the achievement of objectives negatively, for instance, in the risk factor identified above, one of the risks can be the possibility of licences being granted to speculators.

2.3.1 Risk mapping

After identifying risks using the risk assessment matrix above, auditors are required to prioritise the risks to focus on areas that have high risks. This is because a SAI may not have the time and resources to respond to all the risks at once. A risk chart is used to assess the likelihood and impact of identified risks and prioritise the risks that are significant, placing the risks in the right category as follows:



The auditor needs to assess the likelihood that there is a risk in the EI sector along the value chain and assess the impact should the identified risk occur.

Use of the risk chart assists auditors to have a clearer picture of the risks that are critical or high and, in this manner, helps to prioritise the risks that are significant/will have a high impact in the event that they materialise. Based on the overall assessment of the risks, the SAIs decide on the audits to be conducted to respond to the risks. The risk chart is illustrated in figure 5.

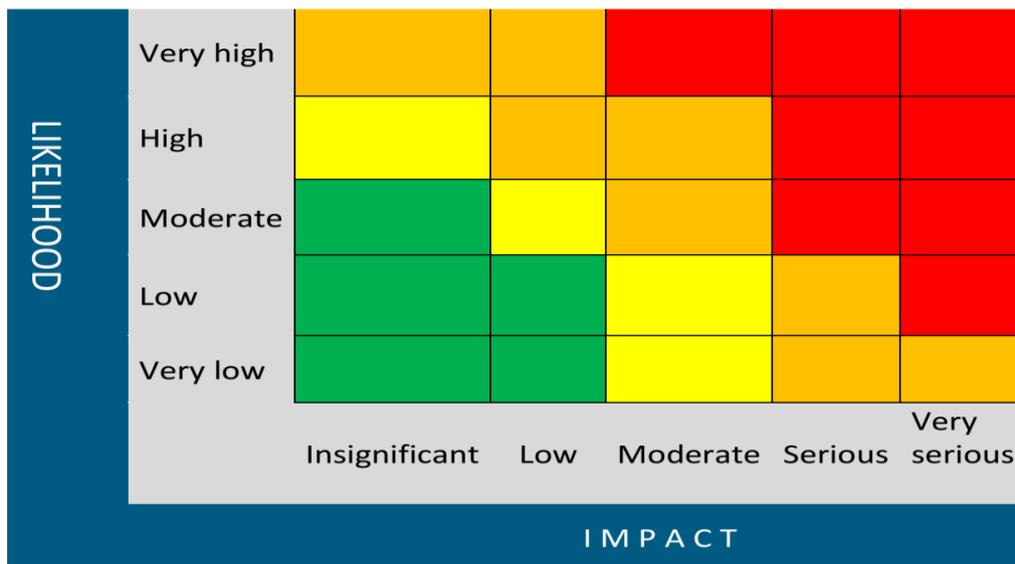


Figure 5: Risk chart

In this risk assessment approach, it is not necessary to address the risks that are insignificant or low. There is a need to assess the risks in the moderate category carefully and decide whether there is really a need to conduct an audit. This model can assist SAIs to avoid low-impact audits and prioritise audits

that are significant to the intended users (Parliament, citizens, donors, etc.) or where the risk along the EI value chain is high.

2.4. Response to audit risks identified

Once the auditor has identified all the relevant risks along AFROSAI-E’s EI value chain, in line with the auditing principles of ISSAI 100, the auditor has the due-care professional obligation to design audit procedures to respond to the audit risks identified. Depending on the nature and understanding of the risk, the auditor may choose to respond to the risk by performing a financial, performance or compliance audit in line with the ISSAIs and as per AFROSAI-E’s methodology in FAM, CAM and PAM.

AFROSAI-E has developed a template that can be used by auditors in prioritising and responding to the risks identified.

Template 2 : Risk mapping matrix

| Sector: | | | | | | Date: | | | |
|--|-------|--------------|-------------|--------|----------------------------|--------------|------------|------------------|-----------------------------|
| Prepared by: | | | | | | Reviewed by: | | | |
| Value chain/Risk management | Risks | Risk factors | Risk rating | | Overall assessment of risk | Audit topic | Audit type | Responsible unit | When will the audit be done |
| | | | Likelihood | Impact | | | | | |
| Policies and legal framework | | | | | | | | | |
| Government activities/decision to explore/ extract | | | | | | | | | |
| Award of contracts and licences | | | | | | | | | |
| Monitoring of operations | | | | | | | | | |
| Assessment and collection of revenues | | | | | | | | | |
| Revenue management and allocation | | | | | | | | | |
| Implementation of sustainable policies | | | | | | | | | |

The concept of the seven steps of AFROSAI-E’s EI value chain and how to use the risk assessment tools along the value chain have now been highlighted; the next chapter contains a more detailed explanation of each of the seven steps.

In each step, the chapter elaborates the roles of key stakeholders and audit considerations that SAIs might take into account in the audit of EI.

Templates 1 and 2 have been developed by AFROSAI-E and can be used by auditors in identifying and mapping risks along the EI value chain.

3. Audit considerations along the extractive industries value chain

3.1. Policies and legal framework

3.1.1. Introduction

Elaborated and clear policies are vital for a country's performance in a particular extractive industry. Policies in this context are metarules (rules that govern other rules). As such, policies concern all legal instruments that regulate extractive industries, or should do so. All legal instruments should ideally be in accordance with policies on extractive industries.

Policies: The legal framework should be in accordance with the policies¹⁸

Box 1 Case examples: The Ugandan National Oil and Gas Policy and the Norwegian 10 commandments
The examples from Uganda and Norway represent two ways of formulating overarching policies for the development and management of the EI sector in a country.

The Ugandan National Oil and Gas Policy¹⁹ defines ten objectives, which shall underpin and provide direction to all future management of the petroleum sector in the country. These are:

- i. To strengthen the legal and regulatory framework for the development of the mineral sector;
- ii. To ensure efficient, equitable, accountable and transparent management of mineral revenues;
- iii. To establish, manage and promote the country's mineral potential;
- iv. To enhance and strengthen the institutional capacity for effective governance of the mineral sector;
- v. To organise and legislate artisanal and small-scale mining in Uganda;
- vi. To promote and protect Health, Safety and Environment in the mineral industry;
- vii. To provide a framework for gender mainstreaming, equity and human rights and eradication of child labour in the mining industry;
- viii. To provide a framework for marketing and value addition of minerals;
- ix. To promote local content and national participation in the mineral industry; and
- x. To promote regional and international cooperation.

In 1971 **Norway** had not yet developed into an oil and gas producer. Prior to becoming a major player in the field, the Norwegian Parliament decided on "ten oil commandments"²⁰ which were the basis of all future activities in the sector (policies). These are:

1. National supervision and control must be ensured for all operations on the Norwegian Continental Shelf (NCS).
2. Petroleum discoveries must be exploited in a way which makes Norway as independent as possible of others for its supplies of crude oil.
3. New industry will be developed on the basis of petroleum.
4. The development of an oil industry must take necessary account of existing industrial activities and the protection of nature and the environment.
5. Flaring of exploitable gas on the NCS must not be accepted except during brief periods of testing.
6. Petroleum from the NCS must as a general rule be landed in Norway, except in those cases where socio-political considerations dictate a different solution.

¹⁸ https://pau.go.ug/uploads/Status_Policy_Implementation.pdf

¹⁹ Ugandan National Oil and Gas Policy (2018)

²⁰ <https://www.norskoljeoggass.no/en/about-us/oljehistorien/>

7. The state must become involved at all appropriate levels and contribute to coordinate Norwegian interests in Norway's petroleum industry as well as creating an integrated oil community which sets its sights both nationally and internationally.
8. A state oil company will be established which can look after the government's commercial interests and pursue appropriate collaboration with domestic and foreign oil interests.
9. A pattern of activities must be selected north of the 62nd parallel, which reflects the special socio-political conditions prevailing in that part of the country.
10. Large Norwegian petroleum discoveries could present new tasks for Norway's foreign policy.

Legal framework is the entire legal and regulatory structure governing the extractive industry. It includes the constitution, legislation, regulations and contracts as well as international treaties regulating the sector. The legal framework plays a crucial role in ensuring good governance and sustainable development, as it serves as the backbone of the relationship between the government, the EI companies and other stakeholders in EI. Hence, it is a cross-cutting issue along the EI value chain.

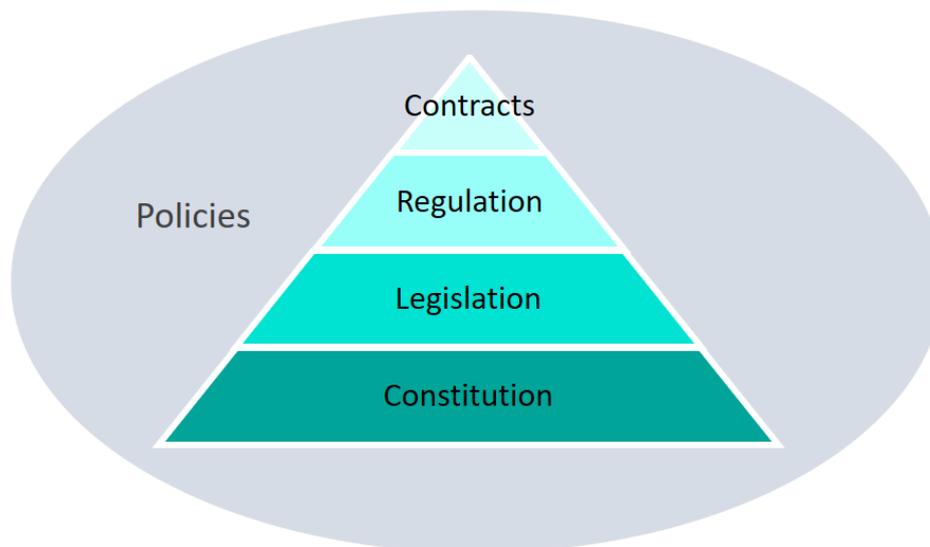


Figure 6: Policies and legal framework hierarchy

The legal framework relating to EI can be found on different levels, and the relationship between the different levels can be illustrated in a **legal hierarchy**. At the bottom of the hierarchy is the foundation, which is the constitution. Furthermore, each instrument becomes more detailed and specific the higher we go in the hierarchy; for example, contracts are usually more detailed than rules and regulations. Moving up in the hierarchy, each legal instrument must be consistent and in accordance with the instrument below it, as the levels at the bottom of the hierarchy have higher authority.²¹ A legal instrument with lower authority can only deviate from a legal instrument with higher authority if the latter legal instrument clearly authorises such deviation. The different legal instruments are described below.

²¹ [Legal Framework](#). NRG Reader March 2015

1. A **policy** defines the core set of principles, procedures and goals for a certain sector underpinning all other rules and activities.
2. The **constitution** defines the principles upon which the state is based, the procedure by which laws are made and by whom. It is thus the most basic law from which all the other laws and rules are hierarchically derived. Most constitutions seek to regulate the relationship between institutions of the state. Some constitutions also act as limiters of state power by establishing lines that a state's rulers cannot cross, such as fundamental rights.
3. **Legislation** is laws (acts) suggested by government or members of Parliament and adopted by Parliament.
4. **Regulations**, instructions, directives and statutory instruments/requirements set out provisions to supplement the legislation. The procedures to change regulations are less comprehensive than for legislation; hence, they are more suitable for periodic adjustments (such as technical requirements, administrative procedures and administrative fees). They often elaborate on specific provisions of an act, offering more detailed and often more practical requirements. Regulations should incorporate internationally recognised good practices, including technical, environmental, accounting and auditing aspects.
5. **Contracts/licences** are agreements between two or more parties that provide the details associated with a specific project, binding only the actors related to that project.

In addition to this, **international treaties** are agreements entered into by sovereign states. Treaties can be bilateral or multilateral. Laws, regulations and contracts should be in accordance with binding treaties a state has entered into. In the legal hierarchy, international treaties will often have the same level of authority as legislation. In case of conflict between treaties and national legislation, the treaties will overrule the national legislation if allowed by the latter. **International standards** can be considered as a part of the legal framework, as long as these are adopted in the legislation, for instance the Organisation for Economic Cooperation and Development's (OECD) transfer pricing guidelines and the Santiago Principles on Sovereign Wealth Funds.

Table 2 lists some examples and further describes the legal instruments in the EI sector.

| LEGAL INSTRUMENT | Table 2 EI NATURE OF THE LEGAL INSTRUMENT |
|---------------------|--|
| Policy | Principles for governing natural resources. Policies in this context are paramount metarules (rules that govern other rules). All legal instruments should ideally be in accordance with policies on extractive industries. |
| Constitution | The constitution may provide the legal basis for: <ul style="list-style-type: none"> • The ownership, exploration, development and production of hydrocarbon and mineral resources; • The structure of political institutions, checks and balances within the political system, environmental protection, civil legal process and labour standards relevant to natural resources; • Power and responsibilities between central government and regional and/or local government; |

| | |
|-------------------------------|--|
| | <ul style="list-style-type: none"> • How resource revenue should be distributed among different levels of government. |
| Legislation and policy | <p>Legislation usually defines the legal and institutional framework; the role of the state, clearly separating commercial activities, licensing procedures and contractual terms; access to resources; comprehensive environmental protection requirements; and a framework for fiscal terms.²²</p> <p>Petroleum act The petroleum act provides high-level information on the roles and responsibilities of government and how the petroleum sector should be managed. The act identifies the main institutions and their roles and responsibilities. The act should contain requirements on how to perform the licensing process, procedures for the exploration and production of petroleum, duties of the licensee, fees and royalties etc. Normally it is the Ministry of Petroleum (or similar) which is responsible for implementing the act and managing the petroleum sector.</p> <p>Mining and minerals act The mining and minerals act expresses the basic position that minerals in their natural state are owned by the state. It outlines the licensing scheme for mineral operations, the incidence of the various mineral rights and the mandate of the major regulatory institutions. There are pieces of subordinate legislation that add detail in specific areas to the regime set out in the principal legislation. Similar to the petroleum act.</p> <p>Petroleum revenue management act The petroleum revenue management act provides rules and procedures for the handling of petroleum revenue by the government. The provisions should cover transfer of petroleum revenue to the consolidated fund (for funding of next year's national budget), establishment and management of reserve funds, transfers to affected local communities, investment policies etc. Normally the central bank is granted a key role in the management of petroleum revenue.</p> <p>Taxation act Often a taxation act specifically aimed at the petroleum and EI sector is established with special tax rates and regulations.</p> <p>Other relevant legislation and policy Health, safety and environment act, procurement act (regulating the bidding process), finance and accountability act, central bank act, audit act, hydrocarbon and/or mining law, petroleum sector policy, mining sector policy.</p> |
| Regulations | Regulations in EI are usually the implementing rules created by the executive body to make legislation practical. For instance, a law may require that the executive body awards petroleum licences through competitive tender. The regulation related to |

²²Extractive Industries Value Chain: A comprehensive integrated approach to developing extractive industries. World Bank 2009

| | |
|---|--|
| | this legislation may then describe how, when and where interested companies must register their interest as well as which specific forms to submit. ²³ |
| Contracts | In EI, the most relevant contracts are those in which the state grants the right to explore or extract national resources. The most common forms of contracts are concessions, production sharing contracts (PSC) and service agreements. These are further discussed in section 3.4. |
| International treaties and standards | <p>International treaties International law on corruption and human rights, United Nations treaties, international investment law.</p> <p>International standards EITI Standard, OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations, OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas, Santiago Principles on Sovereign Wealth Funds, Equator Principles, The Kimberly Process Certification Scheme.</p> |
| Other relevant legal instruments | Government’s strategic plan, annual state budget plan, sales, transportation and marketing strategy etc. |

Requirements on different levels should all be based on government’s key policy decisions. When looking at a single item such as the extraction of petroleum, the legislative framework applicable to the process will most likely be on all four levels described in the legal hierarchy above. The legislative provisions on different levels of the framework should work together and not prescribe contradictory processes.

| | |
|---|---|
| Box 2 Case example: Main legal instruments in the Ghanaian petroleum sector (Upstream) | |
| <p>Constitution: <i>The Constitution of the Republic of Ghana</i></p> <p>Policy: <i>The National Energy Policy (2010)</i></p> <p>Legislation:</p> <ul style="list-style-type: none"> • <i>Ghana National Petroleum Corporation Law, 1983 (PNDC Law 64)</i> • <i>Petroleum (Exploration and Production) Act, 2016 (Act 919)</i> • <i>Petroleum Exploration and Production Law, 1984 (PNDC Law 8410)</i> • <i>Petroleum Income Tax Law, 1987 (PNDC Law 188)</i> • <i>Petroleum Revenue Management Act, 2011 (Act 815)</i> • <i>Petroleum Revenue Management (Amendments) Act, 2015 (Act 893)</i> • <i>Petroleum Commission Act, 2011 (Act 821)</i> • <i>Income Tax Act, 2015 (Act 896)</i> <p>Regulations:</p> <ul style="list-style-type: none"> • <i>Petroleum (Exploration and Production: General) Regulations, 2018 (LI 2359)</i> • <i>Petroleum (Local Content and Local Participation) Regulations, 2013 (LI 2204)</i> |  |

²³ [Legal Framework](#). NRG Reader March 2015

- *Petroleum (Exploration and Production: Measurement) Regulations, 2016 (LI 2246)*
- *Petroleum (Exploration and Production: Health, safety and environment) Regulations, 2017 (LI 2258)*
- *Petroleum (Exploration and Production: Data management) Regulations, 2017 (LI 2257)*
- *Petroleum Commission Fees and Charges Regulations (LI 2221)*

Contracts:

- *The Model Petroleum Agreement of Ghana*
- *The Petroleum Agreements*

Source: [2015 GHEITI Oil and Gas Report \(2018\)](#), [Petroleum Commission Ghana](#), [2018 The Law Reviews Ghana](#)

3.1.2. Role of Parliament, SAIs and government

With regard to policies and the legal framework in EI, the government is responsible for presenting policies for parliamentary approval and establishing a proper legal framework, through laws, acts and regulations based on international best practice. Furthermore, government is responsible for putting structures in place to ensure the proper implementation and monitoring of such requirements. For SAIs, auditors need to have an overview and understanding of the legal framework as well as the roles and responsibilities of the key players in the EI. In this way, in line with the SAI's mandate, the SAI is able to identify whether there are any gaps between the various legal instruments and determine possible risk areas in the legal framework.

3.1.3. Key role players

To acquire a thorough overview of the extractive industries, it is crucial to identify the key players in the sector and understand their roles and responsibilities:

Parliament will pass laws and approve policies regulating the EI sector, and scrutinise and act on the audit reports relating to EI processes and revenues. In cases characterised by high ore significance, Parliament may also allow exploration and development of petroleum and minerals within an area, balancing different considerations such as environmental and revenue prospects.

Government, through ministries, will operationalise the legal framework into regulations that govern the EI sector. Under these laws and regulations, the government is among others responsible for signing and monitoring contracts/agreements with multinational EI companies, and assessment, collection and allocation of the revenues due. Different governmental institutions, i.e. agencies dealing with health, environmental and safety issues, carry out the government responsibilities along the EI value chain. A national petroleum/energy/mining company in which government has all or a majority share(s) can have governmental functions and also act as an operator and/or a licensee.

Within the government, the enforcement of the legal framework is further complicated by the number of public agencies involved in the implementation of the legal framework. Mapping the various ministries and public agencies involved should go hand in hand with the mapping of the legal framework. Some of the relevant public agencies involved are as follows:

- Ministry of mines, petroleum or energy
- Ministry or agency responsible for taxes and/or other financial payments
- Ministry responsible for protection of the environment
- Ministry responsible for health, labour or safety
- Investment promotion agency
- State-owned enterprises

International companies are often crucial in ensuring that advanced technology and experience are brought into the projects. They manage much of the reconnaissance, exploration, production, operating and dismantling of installations. One of their main objectives is to maximise profits, by extracting as much of the resource rent as they can in the countries where they operate.

Civil society tends to monitor the situation closely and function as a watchdog. Ad hoc groupings may be established to protect the interests of affected parties.

External role players have an important role in promoting the rule of law and existence of a robust legal framework. These may include EITI, Tax Justice International, Publish What You Pay, NRGi and others.

3.1.4. Assessing the legal framework across the EI value chain

Specific legislation should be in place regulating the activities of each of the elements of the EI value chain. The auditor needs to obtain an understanding of all existing legislation to identify any gaps, inconsistencies and areas where different interpretations can be applied. As explained above, auditors should not expect to find all these elements covered in a single piece of legislation. Moreover, while some SAIs have the mandate to evaluate certain legislation, others do not.

Government activities/decisions to explore/extract

The duties and responsibilities of key players should be clearly defined in the legislation. The legislation, typically the Petroleum Act/Mining Act, should define who has the right to conduct seismic surveys/exploration and who has the right to own the data gathered from these exploration activities. Legislation must specify what data should be handed over to government for inclusion in national databanks.

Award of contracts and licences

The more comprehensive the legislation, the fewer decisions will have to be made through negotiations with the petroleum and mining companies. The procurement process and the aspects that are left to be negotiated are ultimately policy decisions, in accordance with the legislation, i.e. the Procurement Act. The auditor should identify the relevant steps of the procurement process in the act and identify relevant provisions from other acts or regulations ensuring additional transparency.

Discretionary authority given to individuals and even multiple public servants in quorum should be identified, for instance tax incentives, tax exemptions or tax holidays. Experience shows that a high occurrence of such tax incentives²⁴ reduces the tax base, creates room for bribery and corruption and increases the appearance of loopholes for tax evasion. See more details on this in chapter 3.4.

Monitoring of operations

The legislative framework should provide for the regulatory bodies tasked to perform their monitoring of operations. The mandates of these entities should also provide useful information on what their tasks are. Regulations would normally deal with controls and metering of quality, quantity sales and exports of produced volumes and aspects of human resources, safety and the environment.

Assessment and collection of revenue

Payments derived from EI are often the most prominent revenues. The tax legislation should be updated to cater for the super profits that are made from the extraction of these resources, and special tax rates should apply. Revenues from petroleum sharing agreements/contracts (PSA/PSC) are often the most extensive revenues from the petroleum sector. The auditor could assess to what extent the tax legislation/PSA/PSC is clear on how and which exploration costs can be deducted from the gross

²⁴<https://www.taxjustice.net/2019/01/03/ineffective-tax-incentives-on-profits-heavily-used-by-african-nations-compared-to-european-nations-study-finds/>

revenue. There should also be specific provisions in legislation and PSA/PSC that constitute the arm's length principle and deal with the risk of transfer pricing. A general anti-avoidance rule (GAAR) should also be considered. Some former UK colonies have incorporated or inherited strong GAARs in their legislation.

There should be specific reporting requirements for EI production quantity and quality, exports etc. in various legislation enabling revenue officers to compare audited financial statements and tax returns with relevant and credible production and sales figures.

Revenue management and allocation

The legislation should clearly define how revenue from EI should be managed and allocated to ensure that revenues from extractive industries are used for diversification of the economy and that there is a form of distribution formula in place. There should be clear procedures to invest the collected revenue and ensure maximum dividends.

Implementation of sustainable policies

As extraction and production of natural resources have an impact on the environmental, social and economic aspects of a country, the EI legal framework should include regulations governing these aspects in each step throughout the entire EI value chain. Some examples of legal instruments relevant to sustainability are environmental laws, local content law and labour law as well as environmental, social, health and safety regulations. The steps on *policies and legal framework* and *implementation of sustainable policies* are both cross-cutting issues along the EI value chain.

3.1.5. High-level audit considerations

The SAI needs to map the legal framework thoroughly to establish the following:

- What are the legal requirements of the government's management of the extractive sector? A mapping of the legal framework is a prerequisite for developing an audit programme.
- How is the role of the SAI spelled out in the legislation? The SAI may be given a direct role, e.g. verifying the recoverable costs and receiving declarations of assets from officials.
- Is the legal framework effective and appropriate for ensuring management of the EI sector in line with the decisions and intentions of Parliament? Are the government's policies and policy instruments effective and appropriate for following up on the EI related decisions and intentions of Parliament?
- The legal framework constitutes the bulk of policy that is approved by Parliament. The implementation of those policies presents many possibilities for performance/value-for-money audits. The SAI can review the framework and attempt to identify performance audit themes, based on Parliament's intentions when improving the legal framework.
- Auditors may also consider contracts that influence government reporting, e.g. an agreement with EITI as a member country.
- The auditors may also consider [chapter 5 of the EI Sourcebook](#) on Policies, Legal and Contractual Framework²⁵ as the information might be useful for gaining more knowledge about the topic and could be helpful in auditing.

²⁵ http://www.eisourcebook.org/642_5+Policy%2C+Legal+and+Contractual+Framework.html

Box 3 Case example: Law and practice gap

In relation to the Resource Governance Index (RGI), the Natural Resource Governance Institute (NRGI) also examines the gap between a country's legal framework and its practice. The legal framework score includes all indicators pertaining to the coverage and quality of laws and regulations that shape the resource governance, while the practice score covers the indicators relating to the actions taken by the government.²⁶ The gap between these two scores forms the *law and practice gap*.

Countries in the African region with the lowest gaps:

| Country | Law | Practice | Gap |
|-----------------------|-----|----------|-----|
| Mauritania | 33 | 36 | +3 |
| Zambia | 53 | 56 | +3 |
| Botswana | 43 | 43 | 0 |
| Zimbabwe | 36 | 35 | -1 |
| Algeria | 38 | 37 | -1 |
| Tunisia (oil and gas) | 59 | 57 | -2 |
| Angola | 47 | 44 | -3 |
| Sudan | 29 | 24 | -5 |
| South Africa | 51 | 46 | -5 |

Countries in the African region with the highest gaps:

| Country | Law | Practice | Gap |
|------------------------|-----|----------|-----|
| Tanzania (mining) | 69 | 43 | -26 |
| Tanzania (oil and gas) | 77 | 49 | -29 |
| Niger | 74 | 44 | -29 |
| Liberia | 73 | 40 | -32 |
| Congo | 65 | 30 | -36 |
| Equatorial Guinea | 47 | 11 | -36 |
| Burkina Faso | 86 | 49 | -37 |
| South Sudan | 78 | 20 | -58 |

Source: [Resource Governance Index 2017 Dataset](#)

3.2. Government activities/decision to explore/extract

3.2.1. Introduction

Activities related to the exploration of natural resources encompass the process of mapping the area that has potential. In general, exploration is not carried out by the government itself, but there are several actions and decisions that the government takes. Usually Parliament has the responsibility to make the final decision on opening the exploration areas and other activities. If exploration proves resources reserves, government can choose to open areas for extraction.

Seismic surveys refer to the process of mapping the area that has potential petroleum resources. Besides seismic methods, varieties of geophysical methods are used in mineral prospecting and they are chosen based on the targeted minerals and their deposit settings. Key role players are ministries and agencies/directorates responsible for seismic surveys prior to the licensing process.

²⁶ [2017 Resource Governance Index](#). NRGI

Ideally, Parliament or an appropriate legislative body must consider whether an area should be explored. There will always be several considerations, which may for example relate to the environment. In many cases such resources are discovered in areas rich in biodiversity and a fragile environment. Exploration can also affect communities and local industries. Ultimately, a decision to open an area for exploration is a political decision which should be based on unbiased, neutral information to balance various interests. When a seismic survey is performed, ideally an environmental impact assessment (EIA) should also be done.

3.2.2. Exploration activities for mining

The process of getting minerals out of the ground begins with exploration and appraisal. Exploration usually begins with airborne studies and mapping. Even when minerals are below the ground, geologists can gather initial information based on formations and recordings of magnetic fields. Next, geologists conduct seismic analysis during which they use sound waves to get information about the chemical composition and density of rocks.

If this initial information is promising, companies may apply for exploration licences with which they can conduct further research, usually including some drilling and extraction of core samples. The samples are analysed to estimate the composition and size of a field. Mineral finds are often classified using three categories: *inferred mineral resources*, when it can be inferred that there are minerals but there is insufficient evidence to be certain; *indicated resources*, when there is reasonable confidence, also called a probable reserve; and *measured resources*, when there is a high degree of confidence, also called a *proven reserve*.²⁷

3.2.3. Seismic and geological surveys – onshore and offshore petroleum

Onshore drilling refers to drilling deep holes under the earth's surface, whereas offshore drilling relates to drilling underneath the seabed. It is generally considered to be more expensive to carry out seismic surveys onshore than offshore, but it is cheaper to drill for oil and gas onshore than offshore. This means that it is less likely that onshore reconnaissance licences will be extensively sought after by the companies. It is more likely that the companies will take their chances and drill in places where the sub-soil samples provide some assurance of success. For offshore activities, there are companies who specialise in carrying out seismic surveys. They do a large-scale mapping of the seabed and gather valuable data. By using advanced equipment, they can cover thousands of square kilometres in a short time, but the data must be analysed rigorously before expensive drilling is initiated.

3.2.4. Data management

Government, through ministries and agencies/directorates, should ensure that information from these surveys is stored and updated in a database. Controls should be in place to ensure that reliable and up-to-date information is available in the database. Geological information infrastructure, including regional assessment of petroleum and mineral resources, is also important, as it enables government to better understand and manage the country's petroleum and mineral resources, define public policies, manage land-related conflicts, assess potential future revenues and facilitate bidding processes, particularly in the case of hydrocarbons.

Weak information security poses the risk that information may be disclosed to unauthorised persons with no proper access; where security is low information may be amended unlawfully. On the other hand, certain information on exploration blocks should also be made public if an open bidding process is initiated. Such information includes disclosure that:

²⁷ NRG Reader April 2015 «The Mining Industry - Overview and Trends»

- The process of giving out reconnaissance licences was fair and that the reconnaissance phase has a time limit (usually such licences last one year);
- The licences specify that the data and information gathered from the seismic surveys will become the property of the government and be made public in the long term;
- Any sale of seismic and geological data should be agreed upon with the government. Government should also receive a share of the profit of the sale of data.

Box 4: Example of data management in Norway²⁸

All data gathered from seismic surveys in Norway feed into a centralised database run by the Norwegian government. What is, however, unique in the Norwegian model is the responsibilities placed on the licensees by the government. When companies are given a licence to explore an area within the block, they are obliged to do it thoroughly. While the Norwegian government carries out the initial seismic surveys, it expects the licensees to carry out much more detailed and extensive seismic surveys within their area of exploration. In addition, the companies are obliged to hand over any data gathered from the seismic surveys to the government.

Why? Government should always have the upper hand when it comes to information. It is of major strategic importance that the government has full knowledge of any petroleum and gas deposits in the seabed. This knowledge will assist in establishing future award rounds, setting of the taxation rate and prediction of future revenue from petroleum and gas production.

3.2.5. Extraction of oil, gas and minerals

When the exploration activity results show that oil, gas or mineral deposits are significant and the prospects of generating economic rent or resource rent are great, the government needs to make a decision on whether to extract or not.

Extraction consists of any operations that see the removal of minerals and aggregates from the earth, processing and beneficiation of these extracts and ultimately the sale of the final products and by-products. In addition, the extraction of natural resources is a very risky activity for the environment. The potential environmental consequences can be disastrous. The government must play a regulatory and monitoring role to help mitigate those risks.

Due to the combination of scarcity and high demand for the resources extracted, a great deal of economic rent is produced through extractive industries. Economic rent or resource rent in the context of natural resources is the excess profit or supernormal profit that originates not from the production process but from the inherent value of the resource being exploited. This excess profit is not tied to the production process of the producer, which can extract a normal rate of return from a fraction of the market price. The value of these resources is therefore inherent, and because they occur on land or the continental shelves of countries, they belong to the citizens of those countries.

The final decision on extraction is taken at various levels of government and sometimes even by Parliament. Generally the ministry of mines or ministry of oil/gas will award exploration licences; see more details on the award of licences and contracts in chapter 3.3.

²⁸ The (Norwegian) Petroleum Activities Act, § 10-4

3.2.6. High-level audit considerations

The role of the auditor, first and foremost, is to obtain an understanding of how government gathers information about the exploration area and how this information and data are kept and used. Further, the award of reconnaissance licences follows the same principles as a public procurement process. Although the awarding process will differ from country to country, there are a few steps that are fairly generic, and which can be audited as compliance or performance audits. The SAI should assess the following:

- Whether an EIA was conducted prior to the political approval or if one is planned. Who did the EIA?
- Were quality assurance processes undertaken?
- Was the process of awarding exploration licences conducted in a transparent manner?
- Have the exploration licences been used by the company who was awarded initially, or did the company sell the licence to another company?
- If the company has sold the exploration licence with e.g. 50-90% yield, the government should also get its share or have some mechanisms in place to ensure that such revenues are captured.
- Is there a reason to doubt the reliability of the explorative studies?
- What is the competence of those performing the study?
- Does the government run a seismic data database?
- If yes, is it complete and is proper data security provided for?
- Are the data up to date?

3.3. Award of contracts and licences

3.3.1. Introduction

Different countries have different practices in awarding contracts and licences. While best practice dictates that a competitive bidding process should be followed, governments often opt to enter into bilateral agreements. This section discusses the characteristics of a transparent, competitive and non-discretionary bidding process for the award of exploration, development and production rights. We shall focus on a best practice scenario, highlighting the characteristics of an efficient and effective system.

The characteristics are found in a system that:

- Has well defined institutional responsibilities;
- Has a legal framework representing best international practice for the award of exploration, development and production rights; transparent, competitive and non-discretionary bidding procedures and minimal discretionary authority.

The bidding and licensing process for mineral, oil and gas exploration and production rights is normally managed by a specific ministry that is responsible for interacting with the mineral, oil and gas companies. The process can be run for example to select:

- The lowest bidder;
- The best qualified bidder; or
- The most experienced bidder.

To score and select bidders, such criteria need to be identified prior to the commencement of the bidding process.

Some countries use rigid systems with only a few biddable parameters that affect the sharing of benefits between the government and the investors. Some award exploration rights based on the work programme. In some others, many terms are negotiable. There is no model bidding system or strategy that governments globally can adopt.

Why is there a need for governments to sign contracts with international companies? There is normally an asymmetric distribution of power and information between government and investors. Multinational companies i.e. major petroleum companies have conducted exploration activities for many years and they employ or have access to the best experts in geology and taxation. Governments in countries with newly discovered natural resources are to a large extent dependent on the expertise of these companies to extract the resources buried in the earth.

There are definite **advantages** to involving the international companies to allow for access to capital, competence and capacity. However, there are also **risks**, due to conflicting interests between government and the international companies. Many governments in Africa rely heavily on revenues from natural resources and do not themselves have the required capital and expertise to invest. International companies with funds and expertise are in a good position to negotiate favourable contracts.

In this process, the countries should learn from the mistakes and best practices of other countries that have already been through these processes.

Tax incentives

In some African countries, investment incentives to specific industries have led to large revenue losses and distorted competition (Fjeldstad and Heggstad 2011). Influential corporations and wealthy individuals constantly seek ways to take advantage of special tax breaks to shelter income that should be fully taxed.

It is a commonly accepted fact that tax incentives/exemptions/holidays increase lobbying measures from both multinational companies and wealthy persons, hence increased pressure on higher civil servants and governmental institutions. This pressure also increases the danger of fraudulent activities and corruption.²⁹

Experience shows that a high occurrence of tax exemptions reduces the tax base, creates room for bribery and corruption, and increases the appearance of loopholes for tax evasion.³⁰ This is perilous when discretionary authority to grant such incentives or derogate from legislation is given to a single person.

Multinational companies and wealthy individuals will use the argument of moving business to neighbouring countries or not investing, if not given incentives. Tax incentives/exemptions/holidays should be identified and audited to calculate the total costs/revenues lost by the government/community. Calculated figures on revenue lost due to such incentives might be a basis for bi-/multilateral agreements between relevant states to reduce this unhealthy tax competition (race to the bottom) by giving neighbouring countries enhanced/improved negotiating abilities.

²⁹ <https://www.taxjustice.net/2019/01/03/ineffective-tax-incentives-on-profits-heavily-used-by-african-nations-compared-to-european-nations-study-finds/>

³⁰ <http://www.cmi.no/publications/publication/?4045=taxation-mozambique-tanzania-zambia>
<http://www.cmi.no/publications/file/4499-building-taxpayer-culture-in-mozambique.pdf>

3.3.2. Types of fiscal regime

Awarding of contracts and licences is based on the fiscal system of a country. There are two main types of fiscal system, one based on contracts and one based on concession/licensing. No one system is superior to the other; however, the provisions within the system determine how good the agreement is for the government and how good it is for the international companies.

In a concession licensing system, the title to the resources passes to the oil companies when the resources are extracted, and the government collects its share of the resource rent through collection of royalties and/or taxes.

In the contract system, it is usually specified that the government is the owner of the resource, and that the companies are compensated through a variety of mechanisms. There are two main types of contracts: production sharing contracts and service agreements. The details of these are discussed below.

There is no standard for determining which type of system is best. The amount of resource rent the governments and companies share is usually determined by the parameters of the agreements, rather than the type of agreement used. The key terms and main issues involved in a fiscal system include the following:

- Who will pay for exploration and development?
- How will production costs be financed?
- Who will manage the operation?
- How will the produced resource be shared or sold?
- In what order will the parties be paid?

It is important that auditors become familiar with these types of fiscal systems so that they understand the types of revenue government may collect and the parties' obligations under the different systems. Auditors may also use this to assess whether these arrangements are the right ones for the country.

Concessionary system (relevant for both petroleum and mining)

Concession agreement is the oldest of international agreements and is sometimes referred to as a licence agreement, or as a tax and royalty agreement. A concession agreement licenses a company (the concession holder or concessionaire) to develop a geographic area. The concession holder has the right to sell the production. The government receives a portion of the production referred to as royalty, fees for acreage size, taxes paid by the joint venture, as well as bonuses and social taxes. In a concessionary system a government may share some of the risk of the projects, if the deductions in the tax system allow for write-downs and carrying losses forward or compensations. Norway is an example of this. A common difference between concessions and PSCs is that there is usually no limit on the deductions in the tax systems, so the companies may often be entitled to allocate more cost to the licence.

In the mining sector, a mining law may set out the terms for compensation and implementing regulations. Contracts may also provide for special terms, including relief from royalties or special allowances. If the government is a partner in the joint venture, it also receives a share of the production corresponding to the share it owns.

Contract based systems (relevant for petroleum)

Production sharing agreements

Production sharing contracts (PSCs) are among the most common types of contractual arrangements for mining or petroleum exploration and development. Under a PSC the state as the owner of mineral/petroleum resources engages a mining company as a contractor to provide technical and financial services for exploration and development operations. The state is traditionally represented by the government or one of its agencies. The EI company acquires an entitlement to stipulated shares of

the metals/petroleum produced, both as compensation for costs (cost recovery for investments and services rendered) and share of the profit as reward for the risk taken. The state, however, remains the owner of the minerals/petroleum produced subject only to the contractor's entitlement to its shares of production. The government or its agency usually has the option to participate in different aspects of the exploration and development process. In addition, PSCs frequently provide for the establishment of a joint committee where both parties are represented, both to monitor the operations and to resolve or decide on disputed topics or disagreements.

PSCs are distinguished from other types of contracts in two ways. 1) The company carries the entire exploration risk. If no profitable minerals/petroleum is found within the contract area, the company receives no compensation (ringfencing). 2) The government owns both the resource and the installations. In its most basic form a PSC has four main properties:

- The foreign partner pays a royalty on gross production to the government;
- After the royalty has been deducted, the company is entitled to a share of production for cost recovery, usually limited to some share, e.g. 50%, of the net revenue (after royalties have been subtracted);
- The remainder of the production (profit) is then shared between government and the company at a stipulated share (e.g. 60% for the government and 40% for the company, normally a sliding scale depending on production);
- The contractor must then pay income tax (e.g. 30%) on its share of the profit.

More details on production sharing agreements and the fiscal instruments are provided in the section below on collection of revenue.

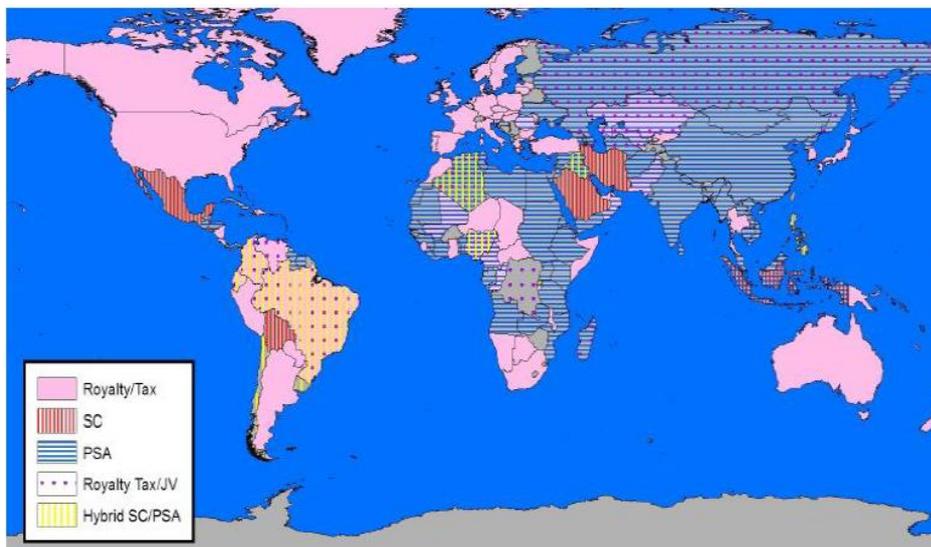


Figure 7: Illustration of petroleum taxation systems³¹

Technical service agreements

Under technical service agreements, the government retains control of the resources and enters into an agreement for a company to provide technical services in the form of exploration work, construction, and managing the development. The government keeps the produced resource, and the company is paid in cash or commodity. This type of agreement is commonly found in environments where the exploration risk is low and there are documented reserves, such as in countries in the Middle East.

³¹ Source: Econ

Contracts (licences, leases, concessions and other contractual arrangements)

Contracts in EI are complex and most often have major potential impact on various aspects of a country. They govern the relationship between governments and oil, gas, and mining companies in the extraction and exploitation of natural resources and affect everything from revenues and tax liabilities to local content obligations to the protection of the environment.

Yet, despite their critical importance, many host country governments lack a strategic vision (policy), strong regulatory frameworks, or the necessary resources to plan, prepare for, negotiate, monitor and implement such projects, limiting their ability to maximise the benefits for their country.

Similarities and differences between petroleum and mining contracts

Similarities between the sectors' usage do exist, but the considerable differences between the two industries are reflected in their contractual preferences, and indeed in the existence of separate regimes for hydrocarbons and mining regulation in most countries. The agreements typically used in the petroleum industry (PSAs/PSCs) have limited relevance to those commonly found in the mining industry. Licences are typically favoured in mining, with permits and concessions sometimes used.

Some of the main differences arise from considerations of geology and exploration, production processes, market economics, and environmental and social impacts. These differences explain in some measure why production sharing agreements are more widely used in the petroleum industry than in mining.

The scope of most petroleum agreements is also wider, extending over more phases of the industry's activity (exploration, production and sale) than mining agreements typically do, and the degree of government involvement and control is usually greater in petroleum agreements than mining agreements.

The importance of model contracts/agreements/licences

EI sector laws give powers to governments to negotiate agreements with potential investors. Hence, negotiators are often allowed to develop terms to attract investment. Differences in the risks and benefits of the blocks or areas that a government can offer are reflected in particular agreement clauses, taking account of specific risks and market conditions. However, the contingency for abuse of this discretionary power is such that recent trends are to confer less discretion, encouraging greater standardisation model contracts, agreements and licences.

The responsibility that government negotiators bear is considerable. Lack of sufficient capacity on their side to negotiate a contract and monitor its operation is often a challenge. The use of model contracts with terms and conditions that may be developed with assistance from international experts has the advantage of reducing the impact of shortages in capacity, experience and competence.

Where to find guides on negotiations and tools to assess and compare contracts

Despite the critical role these contracts play, they are often difficult to discover. [Resourcecontracts.org](https://resourcecontracts.org)³² was developed to fill the knowledge gap by providing searchable contracts and making the content of these often lengthy documents more accessible, categorising and annotating each contract's social, environmental, human rights, fiscal and operational terms. Obligations in an EI project that are not included in a contract are often found in other parts of the legal framework, such as national laws and regulations.

3.3.3. High-level audit considerations

The award of contracts and licences follows the same principles as a public procurement process. Although the awarding process will differ from country to country, there are a few steps that are fairly generic, and which should be audited. The SAI should assess whether:

- The chosen licensee/contractor fulfils all the qualification criteria set in the legislation. It is of vital importance that the operator possesses the correct qualifications and the appropriate competence;
- The contents of the minerals/petroleum agreements are in accordance with the provisions in the legislation;
- If required, the licensee/contractor(s) has set up a separate company in the country responsible for the operations;
- The contractor, when ending the exploration phase and moving into the development/production phase, has fulfilled all the obligations in the current commitment period as provided in the contract/licences and submitted a work programme to the government on the obligations for the next commitment period;
- The government takes action if the contractor does not comply with the time frames in the contract agreement;
- The contractor reports to government within the stipulated time frame after minerals/petroleum have been discovered;
- The appraisal programme has been developed in accordance with international best practice and standards;
- The government has received a report on the activities in the appraisal period and a written declaration of commerciality;
- The contractor has developed environmental and sustainability impact assessments in accordance with the requirements and these are approved by the government;
- The government has received a plan for development and production from the contractor and it has been thoroughly evaluated. The government should approve the plan before contracts for development and production are entered into and before construction commences.
- The production permit issued by the government is in line with the production plan developed by the contractor.
- The government has done everything in its power to ensure that the contractor maximises the production volume from the minerals/petroleum deposits.
- The licensee/contractor is not granted a tax holiday, incentives or other exemptions. If so, the SAI should obtain assurance for the warrant/authority.

³² <https://resourcecontracts.org/>

3.4. Monitoring of operations

3.4.1. Introduction

Effective monitoring practices involve clear definition of the duties of different role players, defined in the regulatory framework. It is important that different parties should be aware of their responsibilities either in terms of providing or reviewing information. When setting up the monitoring functions, separation of roles should be considered among other things. For example, the roles of the ministry of environment (and its environmental unit), the environmental agency, and the state-owned company need to be clearly established to avoid institutional conflicts and poor environmental monitoring. The ministry of environment usually retains full ownership of the clearance and the permitting process on environmental issues. Monitoring of production volumes and related activities may take different forms. It normally entails regular submission of documentation, reports and supporting information by contractors and physical inspections.

3.4.2. Role of government

In the process following the issuance of contract and licences the government has a responsibility to control how operations are going. Companies are normally supposed to provide government with information on the progress of exploration, status of production and process of decommissioning. Government shall also proactively control that companies follow the laws and rules of the country.

What should be monitored?

Production and metering

Government needs to have reliable information on the production volumes and quality. This applies to both petroleum and mining. Production volumes usually form the basis for the calculation of royalties. Non-reporting of production volumes may therefore lead to government revenue losses. Companies shall provide government with accurate production reports, both on extraction of minerals and pumping of oil. Usually, the “resource ministry” (Ministry of Mines or Ministry of Petroleum) shall be the recipient of these reports. However, to verify the content of the reports, government also needs to get an assurance on the accuracy and reliability of the metering equipment. The government could get an external assessor to perform the validation and/or perform spot checks on mines and petroleum shipments.

Regarding the extraction of minerals government needs to reconcile quantity and quality of minerals extracted at the mine, transported, refined (if relevant) and exported through customs. Crude oil and gas are usually transported through pipelines. This measurement is also relevant for calculating transportation fees.

Metering at several points can also be important for discovering leaks early, as above-normal deviations from one measurement point to another can result from a leak that could be environmentally disastrous.

Health and safety

Extractive industries have the reputation of having an inherent risk of accidents. Operating a mine, located many metres beneath the ground, puts great responsibility on the companies’ ability to ensure miners’ safety and well-being. Similarly, operating an oil rig far offshore in predominantly harsh weather conditions requires applying rigorous safety standards. Government will have its own agencies tasked with ensuring that the operator addresses the workers’ health and safety properly.

3.4.3. High-level audit considerations

The SAI plays a role in the monitoring function, by auditing the information provided by government entities mainly relating to revenue collected. These audits assist government in gaining confidence regarding production and export volumes, valuation of minerals and hydrocarbons, and the cost of operations. The role of the auditor would be to ensure that government agencies and supervisory bodies see to it that the laws and agreements regulating the exploration, development and production of minerals/petroleum are adhered to. Normally the auditor should not be the one doing the physical audit of equipment but should instead rely on the internal controls established by the government. However, if there is nothing to rely on the auditor may want to venture into the field. In any case, the auditor should assess whether:

- The appropriate authority tests and examines measuring equipment at regular intervals and in accordance with regulations;
- The ministry on a regular basis approves the methods and equipment used and keeps itself updated on any changes in methods of measuring;
- Government has established relevant regulations that cover health and safety requirements for workers.

3.5. Revenue assessment and collection

3.5.1. Introduction

The ability of a government to assess and collect taxes, royalties, duties and other revenues depends on the choice and quality of fiscal regime and fiscal instruments, and on the administrative and audit capacity and competence in the relevant institutions. Mineral/petroleum extraction activities are subject to a great variety of fiscal instruments. These include taxes that apply to all other sectors of the economy and taxes that are specific to the petroleum and mining industry. In addition, non-tax forms of rent collection (such as royalties, surface fees, bonuses and production sharing) are often used; they can be considerable and even exceed tax revenues. When a national mineral/petroleum company exists, the government should receive dividends as a shareholder of the company. Government revenue may therefore consist of several revenue streams, which in addition may be collected in cash or in kind.

To enable assessment and ensure completeness of the EI companies' obligation to report and pay such taxes, fees, bonuses, duties, VAT, dividends, shares etc., it is essential to collect and verify data on quality and quantity of the volumes produced, consumed and exported. Furthermore, it is important to assess the prices realised by, and the costs invoiced to the EI company, in particular when there are transactions between related companies. Reported prices that do not reflect market conditions at the time of transaction should be corrected by government through anti-avoidance rules and instruments.

In case of tax evasion, tool as surtax, additional tax and criminal proceedings should be considered in accordance with the legal system. All EI related payments and proceeds to government should be reconciled at each payment point/account, and funnelled and deposited into treasury accounts (preferably at the central bank).

3.5.2. Role of government

The government is responsible for collecting various forms of revenue from the EI activities. Below are the five main types of EI revenue, fiscal regimes that the government can use to get a share of the proceeds.

Table 3: Examples of revenue

| TYPE OF REVENUE | CHARACTERISTICS | PROS AND CONS | | EXAMPLES OF REVENUE |
|--------------------|--|---|--|--|
| Upfront | Upfront revenues are meant to reflect the present value of EI resources. | Instant revenue to government's treasury. | Does not reflect the real value of the resources. | Auction of exploration rights, licence fees, area fees, signature bonus and transportation fees |
| Gross taxes | A tax based on the production, not the actual profit made. Costs are therefore irrelevant. | Easy to administrate. Just multiply "price of commodity" with "production volume" multiplied by royalty rate. Gives | May detract from investments because costs are not accounted for. This tax is regressive and not progressive, meaning that government take | Royalties Domestic market obligations (an effective royalty) Certain types of windfall tax Ground rent tax (typically on hydro- |

| TYPE OF REVENUE | CHARACTERISTICS | PROS AND CONS | | EXAMPLES OF REVENUE |
|--|---|--|--|--|
| | | government early revenue before break-even. | will not increase with increased profit. | electric and nuclear power) |
| Field taxation (most applicable for petroleum) | A special tax regime for the oil/gas block with a cost recovery limit and sharing of profit. Based on contracts, not law. | Gives instant revenue for govt. Preferred by IOCs because of predictability of terms. With sliding scales, govt. take will increase with increase in both production volumes and oil and gas prices. | Different contracts for different oil/gas blocks create complexity for revenue authorities. Government cannot easily change the terms. | Production sharing agreements/contracts |
| Corporate net income tax | Tax paid on profit base after costs have been deducted. Law determines tax rate. | By taxing profit, government take will increase. Costs are considered, and investments become attractive. | Risk of transfer pricing puts a big burden on revenue authorities. A taxable profit may only occur some years after production, which may create an expectation gap on the part of the public. | Profit income tax Other taxes include: • Commercial tax • Corporation/ Company income tax • Capital gains tax • Withholding tax • Pay-as-you-earn tax (deductible) |
| Government participation | Government has a share in the EI projects and is part of a consortium. | Gives the government direct access to profit. Enables the country to build local content. | Government takes big risks. In countries with high corruption EI government companies may become unmanageable. | Government share in projects, state-owned companies |

Five aspects of the different fiscal regimes

- Risk sharing refers to how much risk the government bears. If government participates through being a shareholder it will need to cover a similar share of the costs, thus taking a huge risk.

| Five aspects | Upfront | Gross taxation | Field taxation | Corporate net tax | Government participation |
|--------------|---------------------------------------|--|--|---|---|
| | - Auction of rights - Licence fees | - Royalty - Production taxes | Ringfence and/or PSA | Ordinary profit tax and economic rent tax | - National oil company - Shareholder in licences |
| • | Minimal risk sharing |  | | | Maximum risk sharing |
| • | Simple system |  | | Complex system | |
| • | Early revenue |  | | | Late revenue |
| • | | Negative incentives |  | | More neutral |
| • | Low share of economic rent |  | | | High share of economic rent |

Table 4: Characteristics of the different fiscal regimes

However, if government receives a single payment through the auctioning of exploration rights, government does not need to worry about costs, and the companies take all the risk of non-discovery.

- Type of system refers to how difficult it is for the revenue authorities to calculate the correct revenue to be collected. With corporate net tax, the companies have big incentives to book as much cost as possible to reduce the tax base. To mitigate this risk, revenue authorities need highly competent staff on transfer pricing. With royalties, however, government does not need to verify costs.
- The timing of when government receives its revenue will vary among the different fiscal regimes. With e.g. royalties, revenue will come at the same time as production begins, as it can be based on production estimates. This makes it easier to meet big expectations on the part of the public of extraordinary revenues from the new industry. Relying on tax on profit, however, will delay revenue because companies will need to cover their costs first.
- Incentives are affected by the type of fiscal regime. Royalties are not so popular among companies because costs are not considered. Thus if a project has 5% profit, and 10% royalty on production, it would mean that the company most likely has a 5% loss, which would discourage investment and create negative incentives. Tax on profit is however related to the profitability of the project and cash flow of the company, and will therefore not affect their investment decision negatively.
- Government's share of economic rent will increase when moving to the right side of the table. It is only when the commodities are sold on the open market that the real value is revealed. Auctions and royalties are applied before the EI commodities are sold on the open market, and government

may therefore get a share that is far less than the actual value. With participation, however, government is selling the commodities and gets direct access to the market.

The main types of government revenue collected from EI, namely taxes and royalties, are further explained below.

Taxes are calculated and assessed according to the relevant tax regulation, e.g. Company Income Tax Act or Mineral/Petroleum Profits Tax Act. Gross income is calculated by multiplying realised volume of mineral/petroleum with arm's length prices. Taxable income (profit) is calculated by deduction of allowable expenditures from gross income. Allowable expenditures are normally specified in the legal framework, and should be necessary, appropriate, economical and connected to the mineral/petroleum operations. The revenue authorities (tax officials) must assess and control/scrutinise whether both gross income and expenditures are calculated and reported in accordance with the legal basis (acts) in tax returns etc. This requires timely inspections/checks of tax returns and more thorough scrutiny through tax audits to certify that tax returns are in accordance with taxpayers' accounts.

Royalties are normally assessed based on the production of minerals/petroleum, price and quality. There are normally different rates for onshore fields and offshore fields, with rates for offshore fields that run deep, being the lowest. The amount of royalty to be paid on petroleum production, for example, is usually based on the following parameters:

- Production figures of the operating company;
- Prevailing prices for the petroleum produced;
- A royalty rate (calculated as a percentage of value).

To ensure that all taxes and royalties have been collected it is essential to solicit and verify data on the volumes produced, consumed and exported, and on the prices realised by the seller of minerals/petroleum. Reliance may be placed on the metering systems of the companies, but the accuracy of these readings should be checked on a regular basis by the relevant government agency.

Revenue from SOE/NOC

State-owned companies (SOE) or national oil companies (NOC) often have a role in selling the mineral or oil that is the state's share. The state could receive minerals or oil through a number of arrangements, including the NOC's own extraction, its ownership shares in a joint venture, participation in a production sharing agreement, and oil paid by companies to the government to cover their royalty or tax liabilities; see chapter 4.1 for more details about SOE and NOC.

3.5.3. Key aspects of expenditure in EI sector

Exploration expenditure is incurred early in the process when companies start searching for petroleum and gas. Wells used to explore can be either exploratory wells – used to find new reservoirs, or development wells – drilled into the known extent of a producing reservoir. There are generally three categories of incurred expenditure: cash operating costs, general and administrative expenses, and depletion and depreciation expenses (which are non-cash costs). How the expenditure is audited depends largely on how the expenditure is accounted for, which is normally specified in the contract with the company.

One method, called the “**successful efforts**” method, for example, allows a company to capitalise only those expenses associated with successfully locating new petroleum and natural gas reserves. For unsuccessful (or "dry hole") results, the associated operating costs are immediately charged against revenues for that period.

The alternative approach, known as the “**full cost**” method, allows all operating expenses relating to locating new petroleum and gas reserves – regardless of the outcome – to be capitalised.

Exploration costs capitalised under either method are recorded as long-term assets. This is because like the lathes, presses and other machinery used by a manufacturing concern, petroleum and natural gas reserves are considered productive assets for a petroleum and gas company; Generally Accepted Accounting Principles (GAAP) require that the costs to acquire those assets be charged against revenues as the assets are used.³³ As per the ISSAIs, auditors need to understand and evaluate the appropriateness of the relevant accounting framework used.

Legislative requirements on accounting for expenditure items include the provisions of regulations, instructions and the provisions in the contract.

3.5.4. Specific audit focus area – transfer pricing

Transfer pricing (TP) is the estimated value of physical goods, intangible property or provided services between related/associated parties. Such parties or enterprises are commonly named controlling company, holding company, parent company, proprietary company, subsidiary and subsubsidiary company, joint ventures or affiliates.

Since the parties are related/associated, there is an absence of free market conditions. The absence of free market conditions makes it possible to shift taxable profits by fixing prices in the most favourable way for the parties. There is an inherent risk of shifting of profit where cross-border transactions happen within multinational entities (MNEs); the profits are not properly taxed where value is created or added due to transfer mispricing.

Transfer pricing can be defined as a commonly accepted methodology to determine free acceptable deviation from market prices (arm's length). The methodology can be used by authorities as well as private companies. It will help tax authorities in their effort to reduce tax base erosion, and for MNEs it can identify those parts of the enterprise that are performing well and not so well. An MNE could also suffer double taxation on the same profits without proper transfer pricing.

The arm's length principle is set forth in Article 9 of the OECD Model Tax Convention as follows: Where "conditions are made or imposed between the two enterprises in their commercial or financial relations which differ from those which would be made between independent enterprises, then any profits which would, but for those conditions, have accrued to one of the enterprises, but, by reason of those conditions, have not so accrued, may be included in the profits of that enterprise and taxed accordingly".

Most countries have implemented a general anti-avoidance rule (GAAR) in their legislation that can be used to mitigate transfer mispricing.

Why transfer pricing is important to the SAIs within extractive industries

Extractive industries require huge technical investments and specialised expertise that the local mining or petroleum company buys from an affiliated company abroad. Africa also has large deposits of minerals and petroleum. An estimated 60-70% of world trade is transactions between subsidiaries within MNEs. The absence of free market conditions enables profit shifting between countries and thus tax base erosion in any particular country through aggressive tax planning.

According to Global Financial Integrity (GFI) estimates, which are largely credited as the foremost method of sighting illicit financial flow (IFF), the share involving trade mispricing (transfer pricing) was estimated to be more than 80% in the 2015 publication (Kar and Spanjers, 2015), ref. section 4.2.

³³ <http://www.investopedia.com/articles/fundamental-analysis/08/petroleum>

Transfer prices are significant to both taxpayers and tax administrations because they determine in large part the income and expenses, and therefore taxable profits, of associated companies in different tax jurisdictions. To illustrate the opportunity of profit shifting within EI, a survey of 10 of the world's most powerful EI giants showed that 34% of their 6 038 subsidiaries were situated in tax havens.³⁴

Transfer pricing is a worldwide problem for governments, but especially daunting in developing countries mainly because of weak institutions (revenue authorities) and legal frameworks and lack of discipline in the public sector.

Transfer pricing is therefore important to SAIs in their audit/supervision of government performance (i.e. Ministry of Finance and revenue authority) on their assessment, collection and tax audit of revenues from MNEs in EI.

Profit shifting between companies

As some jurisdictions in the world have low or no income tax for companies (tax havens), there are economic incentives for MNEs to shift profit between their companies in respectively high- and low-tax jurisdictions. Profit can be shifted by setting the price (invoicing) higher than market price on services and goods, captives (insurance) and intangibles to a company in a normal tax-rate country. The abnormally high price can then be deducted for tax purposes or as cost recoverable in the latter country and thus reduce the legal tax/revenue base in this particular country.

It is important to note that the invoicing country does not have to be a tax haven. Some seemingly normal tax-rate jurisdictions have special regulations that allow cash flow through their jurisdiction without taxation, and the profit might eventually end up in a tax haven.

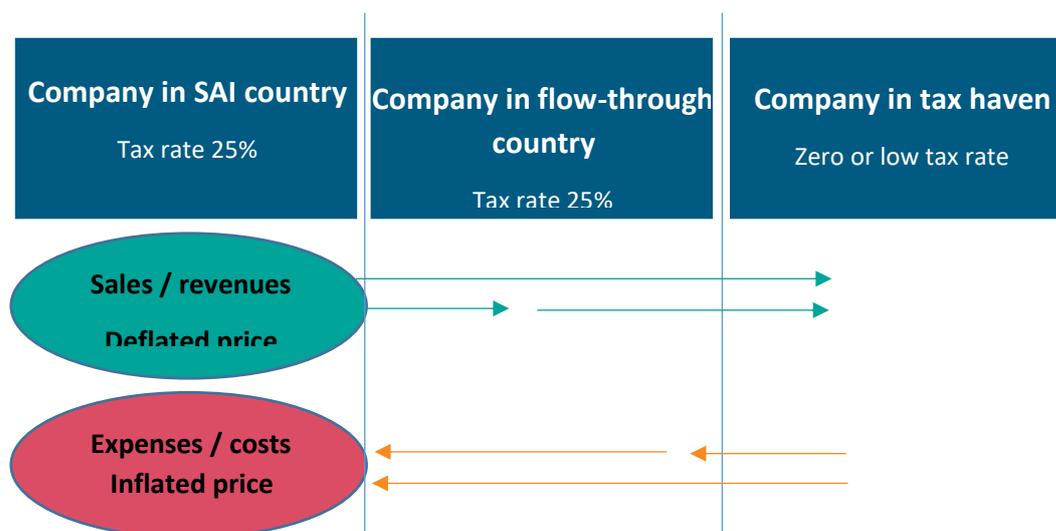


Figure 8: Illustration of transfer pricing

Transfer pricing is a high-risk area in countries with EI due to the nature of the business: MNEs, advanced technical expertise and knowledge, large investments, valuable assets and intangible property. Within production sharing agreements, transfer pricing has consequences for the

³⁴ Mathiason, N. (2011). *Piping Profits. Mapping the 6,038 subsidiaries owned by ten of the world's most powerful Extractive Industry giants and the quest by Latin American journalists to find out more*. Oslo: Publish What You Pay Norway. <http://www.publishwhatyoupay.no/pipingprofits>

calculation of recovery costs and it is an important issue in ring-fencing. Cost recovery statements will normally contain costs incurred through services performed by an associated enterprise. Since the sister company and the local company have the same owner, the companies have incentives to exaggerate the costs incurred to be able to deduct more costs through cost recovery. For other than tax purposes, it is indifferent to the company where income and costs are located.

How to audit transfer pricing and what the SAI auditors need to know

Revenue authorities and SAIs are the most important institutions to prevent transfer mispricing. SAIs in some countries have direct authority to audit cost statements according to production sharing agreements and therefore have tasks similar to a tax authority. Tax authorities (and some SAIs) accomplish TP prevention through tax audits of the companies or TP risk assessment, comparability analysis and function analysis. Reassessments by the tax authorities might be challenged through a complaint from the company to tax tribunals or courts. Under certain contracts, in particular PSAs, the SAI and revenue authority can challenge mispricing through an Appeals Board/Advisory Committee or through ordinary judiciary and/or reporting cases of tax evasion and fraud for indictment/prosecution.

Where a SAI has no direct authority to audit cost statements, the SAI's tasks should primarily be monitoring and conducting compliance and performance audit of the tax authority on its accomplishment and performance on TP issues.

There are different TP rules and regulations across the globe. Common to them all is that they contain rules on what kind of information companies should present to government bodies to enable them to control the price set between affiliated parties. Further, they contain pre-approved methods of calculating an arm's length price. For OECD countries there are five pre-approved methods.³⁵ These methods are:

- Comparable uncontrolled price (CUP): Prices between unrelated parties;
- Cost plus method: Comparing gross profit to cost of sales;
- Resale price method (RPM): Comparing unrelated gross profits between unrelated parties;
- Profit split method (PSM): Delineation of interrelated and uncomparable transactions where substance (risks, efforts, tasks, contributions etc.) is allocated in order to find an arm's length split of profit between the related companies;
- Transactional net margin method (TNMM): Testing of net profit between related and unrelated parties for similar transactions. Practical solution when other methods do not solve the TP problem.

Other jurisdictions may have more pre-approved methods, for example the USA has seven pre-approved methods. Some countries limit the arm's length considerations so that the companies must use one of these methods to prove arm's length, whereas other countries allow presentation of other methods to prove arm's length. Either way, the reasoning behind all the methods used is to substantiate that the transaction/agreement is economically sound and could have been concluded by unaffiliated parties (arm's length).

To do this, extensive amounts of documentation need to be examined. The documentation should disclose the nature of the transaction, the amounts paid and a comparable price/contract, which can substantiate that the price agreed upon does not significantly diverge from what two unrelated parties could have agreed. Today, almost all MNEs will have this information ready for authorities' inspection at the time of filing their tax returns.

³⁵ <http://www.transferpricing.wiki/general-transfer-pricing-information/transfer-pricing-methods/>

Examples of transfer pricing audit findings

- Reluctance or unwillingness to provide mandatory TP documents for audit;
- Weak practice in revenue authority's resolve regarding taxpayer's compliance by providing TP documentation within deadline;
- Lack of competence and resources in revenue authority;
- General assistance costs invoiced from affiliated company not free of affiliate's shareholder cost mixed with cost of providing services to affiliated companies;
- Indiscriminate rate of services provided regardless of staff experience or merit;
- Duplication of costs (liable not to be discovered/detected in TP arrangements);
- Insurance/captives – overpriced by subsidiary in tax haven;
- Use of intangibles – overpriced by subsidiary in tax haven;
- Loans and financing/funding from related companies/affiliates with inflated interest rates;
- Restrictions to audit TP in clauses in PSA (void terms in PSA);
- 973 USD – Price on plastic bucket;³⁶
- 52 USD – Price on rocket launcher;³⁷
- 13 USD – Price on camera recorder.³⁸

3.5.5. High-level audit considerations

The SAI needs to do a thorough mapping of the legislation and contracts/agreements that have provisions on revenues from EI. The legislation on revenues from EI might be in separate petroleum or mining taxation acts, or they may be handled in the general income tax act of the country. For production sharing agreements/contracts, the most important provisions for revenues are in the contract itself.

The SAI should assess whether:

- Reported volumes and quality of produced minerals and petroleum are correct;
- The tax is calculated based on the rate specified in the relevant law, act or contract;
- The deduction of costs for a specific year of income only relates to the relevant contract area (ring-fencing),³⁹
- Deductions of funds going to a decommissioning fund reserve are relevant;
- The recoverable costs are in line with the eligible deductible expenditures defined in the PSA/PSC, or in the taxation act (necessary, appropriate, economical and connected to the mineral/petroleum operations);
- The prices in transactions between related companies are assessed and tested for transfer mispricing;
- The value of petroleum/minerals etc., from which tax revenues are derived, is calculated and measured in accordance with legislation/contracts;

³⁶ Pak, S. J., Zdanowicz, J. S. (2002). *U.S. Trade with the World*. Malvern/Miami: Trade Research Institute: http://www.oss.net/dynamaster/file_archive/040318/50b167ce2bb58f256cf8c2225aa4da82/OSS2003-01-09.pdf

³⁷ Pak, S. J., Zdanowicz, J. S. (2002). *U.S. Trade with the World*. Malvern/Miami: Trade Research Institute: http://www.oss.net/dynamaster/file_archive/040318/50b167ce2bb58f256cf8c2225aa4da82/OSS2003-01-09.pdf

³⁸ Pak, S. J., Zdanowicz, J. S. (2002). *U.S. Trade with the World*. Malvern/Miami: Trade Research Institute: http://www.oss.net/dynamaster/file_archive/040318/50b167ce2bb58f256cf8c2225aa4da82/OSS2003-01-09.pdf

³⁹ In many countries, such as Uganda and South Sudan, companies can only deduct the costs that relate to activities within the contract area. In countries like Norway, the ring-fencing is between offshore and onshore. Thus, companies can deduct *all* their costs from all their contract areas combined, but not costs related to onshore activities/operations.

- The revenue authority ensures that tax returns are submitted timeously and complete for correct calculation/assessment of revenue;
- The revenue authority ensures timely payments and reconciliation of accounts in accordance with the legislation/contracts (as specified in the taxation act/PSA/PSC);
- The revenue authority ensures that all licensees/contractors are captured in the relevant revenue systems.

Transfer pricing audit considerations

The tax auditor should consider the country's domestic legislation regarding key TP principles, including the arm's length principle, TP methods, comparability analysis, intangible property, intra-group services, cost contribution agreements, TP documentation, administrative approaches to avoiding and resolving disputes, safe harbours and other implementation measures.

The legal framework is different from country to country. While some jurisdictions have strong laws and regulations that can prevent or resolve transfer mispricing, others have weak laws or no regulations. In this case, a tax auditor should consider whether it is legally possible to apply a general anti-avoidance rule (GAAR), the OECD guidelines on TP and/or any other international best practice.

A SAI's mandate is normally limited to controlling how tax authorities handle TP risks. Audits on this subject may be conducted either as compliance or performance audits. Some examples of compliance and performance audit topics are listed below.

Compliance audits

Examine/check/survey/scrutinise relevant revenue authority on their:

- ❖ Reliability/trustworthiness of reports on controls and tax audits;
- ❖ Paramount policies/requirements by Parliament and/or superior authority;
- ❖ Compliance with legislation, e.g. tax audit performance, internal quality assurance;
- ❖ Compliance with provisions in contracts/agreements, i.e. monitoring, audits, surveillance etc.;
- ❖ Use of policy instruments, e.g. documentation deadlines, sanctions and penal provisions, surtax;
- ❖ Accuracy in the selection of tax audit subjects;
- ❖ Results of tax audits, reassessment and controls in increased revenues;
- ❖ Use of information exchange agreements (IEAs), if any;
- ❖ Use of other relevant international agreements/treaties (assistance to collect abroad).

Performance audits

Assess the performance of the relevant revenue authority on:

- ❖ Steering and control by superior authority (Ministry of Finance);
- ❖ Growth and progress in quota of taxpayers selected for tax audit/control;
- ❖ Organisation, competence and capacity on TP;
- ❖ Survey of taxpayers' behaviour;
- ❖ Vignette test of civil servants' competence on TP;
- ❖ Case administration/tax audits and time consumed – cause;
- ❖ Effects of tax audits, reassessments;
- ❖ Controls in increased revenues.

Financial audits (not relevant for all SAIs)

- ❖ Direct audit of cost statements from EI company;
- ❖ Direct audit of revenue statements from EI company;
- ❖ Assess EI company reports/tax returns with comparable databases regarding e.g. volumes produced and quality (Ministry of Finance, Ministry of Mines, Petroleum Authority, Customs/Asycuda⁴⁰);
- ❖ Assess and compare EI company's TP policies and practices with acceptable national/international standards;
- ❖ Stratify and select costs and revenues to/from affiliated companies based on risk and materiality to ascertain in accordance with arm's length principle.

⁴⁰ <https://asycuda.org/en/about/>

Table 5: Revenue loss in EI sector – and mitigation

| Revenue loss in EI-sector - and how to mitigate | | | | |
|---|--|---|---|--|
| Affected source | Cause | Manipulation/ evasion/avoidance | Government Mitigation Good governance | SAI response |
| Tax rate | Negotiation competence, skills, bribery | Tax incentives | Improve negotiation skills, contract transparency, renegotiate contracts, anti-corruption work, EITI (publish what you pay/receive) | Compliance and performance audit, supervision, recommendation through (annual) audit reports |
| | | Tax exemptions/holidays | | |
| | Treaty shopping | Withholding tax | General Anti-Avoidance Rule (GAAR) Renegotiate treaties | Compliance and/or performance audit, recommendation through (annual) audit reports |
| | Change of ownership | Capital gain tax | Supervision, reporting mechanisms | |
| Tax base | False statements/returns Fraud | Volumes and quality of production | Revenue Audits, Assess/analyse relevant databases, Use of provision on offences in taxation act and criminal act | Compliance and/or performance audit, recommendation through (annual) audit reports |
| | Underreporting- Transfer Pricing | Sales price | Tax/revenue audit General Anti-Avoidance Rule (GAAR) Use of provision on offences in taxation act and criminal act | Compliance and/or performance audit, recommendation through (annual) audit reports |
| | Inflated costs/ Transfer Pricing false returns/ statements Overreporting | Ineligible costs | Tax/revenue audit General Anti-Avoidance Rule (GAAR) Use of provision on offences in taxation act and criminal act | Compliance and/or performance audit, recommendation through (annual) audit reports |
| | | Misallocated costs Inflated goods and Services | Tax/revenue audit General Anti-Avoidance Rule (GAAR) Use of provision on offences in taxation act and criminal act | Compliance and/or performance audit, recommendation through (annual) audit reports |
| | | Debt Financing | Tax/revenue audit General Anti-Avoidance Rule (GAAR) Use of provision on offences in taxation act and criminal act | Compliance and/or performance audit, recommendation through (annual) audit reports |

3.6. Revenue management and allocation

3.6.1. Introduction

The extraction of minerals/petroleum has the potential of generating massive revenues. At the same time, extraction of these resources is no guarantee for ensuring prosperity, equal distribution of wealth, reduction of poverty and long-term fiscal sustainability. On the contrary, revenue from these resources can deepen existing corrupt practices and illegitimate power structures. It is therefore vital that the revenue generated should be used in a way that benefits the whole country.

There are different ways of designing a system for the distribution of revenue from these resources. It is considered best practice to plan for and set aside excess revenue into interest-bearing reserve funds. There should also be rules and procedures for how the revenue should finance the expenditures of the national budget.

According to the EITI, the key steps in transparent and sound revenue management and allocation are to:

- Prepare appropriate macroeconomic policy responses to mitigate any negative impact from exchange rate appreciation;
- Make savings decisions to facilitate: (1) the smoothing of public expenditure considering revenue volatility and (2) asset accumulation considering the finite nature of oil, gas and mineral resources;
- Allocate public expenditures judiciously, nested within a medium-term expenditure framework and aligned with a country development strategy that ensures adequate scrutiny and appraisal of public investment choices and provides for sound revenue sharing policies.

3.6.2. Petroleum and mineral sovereign wealth funds

With worldwide economic price booms the level of government revenue and accumulation of “windfall profits” have reached proportions unseen in the past. For countries with large expected revenues, petroleum and mineral sovereign wealth funds provide a way to collect revenue which government cannot efficiently spend during a single year. To avoid such wasteful expenditure or spending that overheats the domestic economy, “oil and mineral funds” have been created in several producing countries. The funds may have some or all of the following objectives:

- To set aside revenue that would be used to smooth expenditure over time, thus countering the effects of price volatility and variations in production levels;
- To save part of the revenue derived from current exploitation of natural resources for the benefit of future generations;
- To invest the savings in other countries, to avoid overheating of the domestic economy;
- Depending on the magnitude of the accumulation, to insure against extraordinary events (for example, natural disasters).

Countries that have just started production usually aim not for a permanent savings fund, but rather for a temporary but fairly constant expenditure level for several years to kick-start their development. Countries making substantial revenues from EI often start by eliminating high-interest debt before implementing policies to invest surplus funds. It can also happen that the oil and gas booms generate an increase in public debt. Caution should be exercised to ensure that countries are not too optimistic about future revenues from EI. This can lead to over-committing the anticipated revenue, whereas a fall in prices would translate to lower than expected revenue, which may prove insufficient to service the debt. Some countries decide to have a stabilisation fund which acts as a buffer against both a sharp drop

and rise in commodity prices. In South Sudan the legal framework⁴¹ allows for an “Oil Revenue Stabilisation Account” to be established, in addition to a Future Generation Fund. The Oil Revenue Stabilisation Account shall contain excess revenue which may be used during times when the oil price drops suddenly. One such incidence was in 2014 when the price dropped to below 30 USD. For some countries, which were dependent on having an oil price of for example, 75 USD to break even, this represented a potential fiscal crisis.

The lesson learned is that in times of high oil prices, the government should consider saving the extra revenue rather than inflating the state budget. There will always be times when the oil price drops because of trends in the world economy, and the government needs to be prepared to meet this challenge.

Box 5 Case example – The Dutch disease

Is a reminder that revenue collected from petroleum resources is not only a blessing, but also a curse, if not handled correctly. The Netherlands discovered large gas fields in 1959 and after extracting the resources, large quantities of foreign currency were flowing in, with the result that the Netherlands had a much stronger currency than other nations. The Dutch government also increased its spending, which increased inflationary pressure on the domestic economy. The manufacturing industry suffered greatly from this by being less competitive.

Policies should be set to ensure long-term fiscal sustainability and prevent the so-called “Dutch disease”. Annual budgeting should be based on accurate estimates of petroleum and mineral prices and assumptions of volumes.

3.6.3. High-level audit considerations

The reports of the SAI in this area could alert the government to the need to encourage sustainable planning and budgeting. The EITI value chain contains some questions, which the SAI can use to address the important areas:

- Are the decisions on revenue allocation transparent?
- Are expenditure decisions nested within a sound macro-fiscal framework and in line with the country’s development strategy?
- Are there policy measures to address the risk of Dutch disease?
- Is there a credible mechanism to deal with excess revenue in a sustainable manner, such as setting it aside in a transparent savings and stabilisation fund?

The Santiago Principles⁴² represent another important set of internationally accepted standards for the establishment and management of sovereign wealth funds. There are 24 principles covering e.g. legal framework, governance framework and audit (relevant for SAIs).

In many cases a separate mineral or petroleum revenue management act is developed. The act would, as mentioned in chapter 3.1.3, establish an account for revenue from EI, outline rules for how the revenue should be transferred to the consolidated fund, how funds should be set aside into reserve funds and how transfers to communities in the producing areas should be designed. To provide assurance that the rules and regulations for managing revenue from EI are being adhered to, the auditor should assess whether:

⁴¹ Petroleum Revenue Management Act 2013

⁴² <https://www.ifswf.org/santiago-principles-landing/santiago-principles>

- Revenue from EI is being paid on time into the designated account in the central bank;
- There is a management agreement between the Ministry of Finance and the central bank which also covers investment policies;
- The cap set on the amount of revenue from EI to be transferred to the annual budget is adhered to. Normally, the transfer of the revenue should not exceed what is needed to fund next year's national budget;
- Transfers from the central bank are processed only with the appropriate signatures;
- Any reserve funds established are managed in a proper way and they are spent for the intended purpose. Withdrawals should only be made for the intended purpose;
- Transfers are made to the local communities defined in the legislation as eligible recipients.

3.7. Implementation of sustainable policies: economic, environmental and social concerns

3.7.1. Introduction

The extraction of natural resources has global, regional and local environmental, social and economic impact. It is important for governments to implement policies that reduce the negative effects of EI activities on the environment and the local communities to a minimum, and ensure sustainable development and economic growth. The extraction of natural resources can be an opportunity, for example establishing national parks and nature reserves for vulnerable areas, improving local infrastructure, empowering local communities, and creating potential for local employment and service provision. The potential for development is sizable given that EI drives services, logistics, education, health and other sectors.

Sustainability is a crosscutting issue along the EI value chain, as shown in the table below.

Table 6: EI value chain and sustainable policies

| EI value chain step | Relevance to sustainable policies |
|---|--|
| Policies and legal framework | Environmental, social, health and safety regulations, revenue management regulations, local content policies and legislations, contracts, licensing agreements and conditions for tender qualifications etc. |
| Government activities/decisions to explore/extract | Baseline assessments, verification of licence compliance, environmental and social considerations when exploring etc. |
| Award of contracts and licences | EIA/ESHIA licence and requirements etc. |
| Monitoring of operations | Environmental, social and health (EIA) monitoring, monitoring of closure/decommissioning (during and after) etc. |
| Assessment and collection of revenues | EIA licence fees, rehabilitation fees, monitoring fees, community development funds, decommissioning funds/financial assurance etc. |
| Revenue management and allocation | Managing and allocating revenue from community development funds, decommissioning funds or sovereign wealth funds etc. |

SAIs have a duty to make a difference to the lives of citizens by providing objective and independent assessments of whether the public resources are managed responsibly and effectively by their governments within the area of sustainable development – ensuring the protection of natural resources and healthy ecosystems resulting in the well-being of all citizens.

3.7.2. Role of government

Governments are responsible for the legislation, regulations and policies related to sustainable issues, including social services, public health, education, public infrastructure, economic policies and setting environmental performance standards. Governments are also responsible for aligning mining and petroleum legislation and policies with national development plans and international initiatives, and for putting in place institutions and agencies capable of managing the extractive industries. In some areas, particularly in the developing world, regulation is not well enforced by governments. Governments should enforce regulations, invest in and deliver basic services, ensure human rights are protected, put in place fiscal regimes, manage revenues transparently and invest these revenues in sustainable development.

3.7.3. Sustainable Development Goals and Agenda 2063

The 17 Sustainable Development Goals (SDGs) represent the United Nations' post-2015 agenda for equitable, socially inclusive and environmentally sustainable economic development. As per the African Union Vision of "An integrated, prosperous and peaceful Africa, driven by its own citizens and representing a dynamic force in the international arena", Agenda 2063 is a strategic framework for the socio-economic transformation of the continent over the next 50 years. It builds on and seeks to accelerate the implementation of past and existing continental initiatives⁴³ for growth and sustainable development. Agenda 2063 is also built on national, regional and continental best practices in its formulation. In a broader context, the SDGs and Agenda 2063 are interconnected, although born from two different multilateral institutions. Governments have the primary responsibility for follow-up and review in relation to the progress made in implementing the goals and targets. Governments are also expected to align EI policies with national development plans. The aim is for EI issues to be incorporated into the business and operations of EI companies, so that the sector will contribute towards the achievement of the SDGs and Agenda 2063. Achieving the SDGs by 2030 will require all sectors and stakeholders to incorporate the SDGs into their own practices and operations, requiring unprecedented cooperation and collaboration among governments, non-governmental organisations, development partners, the private sector and communities. The extractive industries have an unprecedented opportunity to mobilise significant human, physical, technological and financial resources to advance the SDGs. With careful planning and implementation, the EI sector can create jobs, spur innovation and develop investment and infrastructure. If managed poorly, the industry can lead to environmental degradation, displaced populations and increased conflict, among other challenges.

SAIs can, through their audits and consistent with their mandates and priorities, make valuable contributions to national efforts to track progress, monitor implementation and identify improvement opportunities across the full set of the SDGs. AFROSAI-E has endeavoured to map the SDGs and Agenda 2063, ref. Annex 5, to extractive industry with the following objectives:

- Facilitate a shared understanding of how EI most effectively supports the achievement of the SDGs and the 2063 Agenda;
- Enable SAI auditors, key EI actors and their partners to identify how the industry can support countries in achieving the SDGs and 2063 Agenda;
- Encourage SAIs to further incorporate relevant SDGs and the 2063 Agenda into their audits of EI and operations, validate their current efforts and spark new ideas in auditing.

⁴³ Some of the past and current initiatives it builds on include the Lagos Plan of Action, the Abuja Treaty, the Minimum Integration Programme, the Programme for Infrastructural Development in Africa (PIDA), the Comprehensive Africa Agricultural Development Programme (CAADP), the New Partnership for Africa's Development (NEPAD), regional plans and programmes and national plans.

3.7.4. Managing environmental and social issues

All extracting activity should be preceded by an environmental impact assessment (EIA) or environmental social health impact assessment (ESHIA), an assessment of the possible positive or negative impact that a proposed project may have, taking into account the environmental, social and economic aspects. The international standards on environmental management, the ISO 14000 series, prescribe how such assessments shall be carried out. Ideally, the EIA should cover the following phases of the extraction process:

1. Reconnaissance activities (seismic and geological surveys);
2. Exploration drilling;
3. Development and production;
4. Construction of transportation systems;
5. Decommissioning.

While undertaking the EIA, the licensee/contractor should also conduct a comprehensive environmental baseline study. This will assist in comparing the post-extraction activities phase with the initial situation. The EIA will lead to the development of an environmental management plan. This plan will be prepared by the licensee/contractor and will lay out the environmental requirements for the extraction activities. The plan should be reviewed and approved by the government. It is also considered best practice to disclose the environmental plan to the affected communities. If changes are made to the environmental plan, they should be communicated to the communities to ensure that their views are considered.

The risk is often that EIAs are carried out only at the initial phase of exploration, and not applied throughout the whole process ending with the abandonment of the project. There is also a risk that assessments and plans are not updated when changes occur. Furthermore, there is a risk that fees paid by licence holders for the regulator’s monitoring are not used for that purpose.

3.7.5. Extractive industries’ environmental and social impact

Petroleum and mining activities can have many effects on society and the environment. In order to assist SAIs to better understand the challenges and risks, some of the environmental⁴⁴ and social issues have been identified and described below.⁴⁵

Table 7: Environmental and social impact issues

| Environmental impact issues | Social impact issues |
|---|--|
| <p>Biodiversity</p> <p>EI can have huge negative impact on biodiversity, resulting in the destruction/disruption of habitats, ecosystem degradation and loss, destruction of key flora and fauna, deforestation, oil spills or releases of toxic compounds. EI can cause enormous damage to the environment.</p> | <p>Human rights</p> <p>Human rights issues in the mining industry can include security, corruption, discrimination, child labour, labour conditions, environmental damage, land acquisition and resettlement, loss of culture and local community economic development along with specific issues for indigenous peoples.^{46,47}</p> |

⁴⁴ For more information on environmental issues in mining, see INTOSAI WGEA 2010, [Auditing Mining: Guidance for Supreme Audit Institutions](#).

⁴⁵ Risks and effects will differ based on the EI operations as well as country context.

⁴⁶ International Finance Corporation; Sustainable and responsible mining in Africa – a getting started guide

⁴⁷ For more information on human rights risks, see BGR 2016, [Human Rights Risks in Mining – A Baseline Study](#).

| Environmental impact issues | Social impact issues |
|---|--|
| <p>Disaster management and emergency preparedness</p> <p>EI related disasters can be catastrophic, endangering human lives and communities, as well as affecting the natural environment. Disaster management risk assessments must be conducted and reactive management plans must be developed to reduce the damage caused by a disaster.</p> | <p>Fatalities, safety and occupational health of miners and communities</p> <p>EI exposes employees to dangerous working conditions, e.g. risks of collapse in underground mines, explosions, floods, fires etc. Occupational health hazards include e.g. exposure to very high temperatures and loud machinery, inhalation of dust and contact with chemicals.</p> |
| <p>Decommissioning, rehabilitation and mine closure. See below.</p> | <p>Local content, local employment and investment. See below.</p> |
| <p>Water usage and water pollution</p> <p>EI depends on water. Wastewater, offshore drilling and mine waste can pollute water sources and affect plants, marine and other wildlife.</p> | <p>Gender equality</p> <p>EI activities can have negative social impacts such as crime, alcoholism, domestic violence, prostitution, trafficking and sexual exploitation and sexually transmitted diseases.</p> |
| <p>Air emissions</p> <p>EI is energy intensive and requires extensive use of transport, producing gaseous emissions. Oil and gas operations also lead to burning and releasing of gases, “flaring”. Dust, particles and gaseous emissions in the air can lead to severe human health impacts and respiratory diseases as well as environmental degradation, CO₂ emissions and climate change.</p> | <p>Cultural heritage</p> <p>EI activities can potentially affect the culture and traditions of local communities, particularly indigenous communities, by disrupting traditional practices or damaging areas of archaeological, historical, artistic or religious significance.</p> |
| <p>Pollution and waste management</p> <p>Pollution from waste, if not managed effectively, can have significant impacts on the natural environment and the communities, through contaminated water and crops, reduced soil quality, and other human health and environmental impacts.</p> | <p>Displacement and resettlement of communities</p> <p>One of the major social impacts of onshore mining and oil activities is the displacement or forcing of thousands of people to abandon their current homes, which worsens social marginalisation, unemployment, homelessness and health problems.</p> |
| <p>Land usage and acquisition</p> <p>Environmental disruptions include permanent loss of natural resources and pre-emption of alternative land uses (for agriculture, forestry, hunting or leisure).</p> | <p>Other social issues worth noting</p> <ul style="list-style-type: none"> • Food security and deterioration of livelihoods • Increased cost of living and economic disparity • Changes in population dynamics |

Community development

Extractive industries’ effect on people’s livelihood is substantial. The challenge at the community level is to maximise the benefits and avoid or mitigate any negative impacts of EI activities. Priorities and ultimately choices regarding trade-offs relating to different social, environmental and economic goals need to be determined through participatory processes before, during and after EI operations, involving all relevant actors, including members of the affected community, and in accord with the local context.

Community development is the process of increasing the strength and resilience of communities, improving people’s quality of life and enabling people to fully participate in decision-making. There is increasing emphasis on the importance of meaningful engagement and involvement with local communities, which enables companies to better understand and communicate more effectively with local communities, enhancing respect and reducing conflict. To gain the trust of local communities in regions around the world, companies are building local schools, hospitals and infrastructure, and supporting communities through local procurement and employment. Some best practices include educating local communities on health-related issues so they can reduce the incidence of preventable illness and disease; providing communities with financial training to build viable businesses; leveraging

existing infrastructure to create new economic activity and reskilling local workers in alternative industries, such as agricultural production, which can help them thrive once local EI projects shut down.⁴⁸

Community development initiatives have previously been associated with companies' corporate social responsibility programmes. However, community development is becoming a requirement in more and more countries. In West Africa, Community Development Agreements – a compact between government, mining companies and communities – are mandatory for getting mining licences. Community Development Agreements are regulated in law. The agreements also include provisions on the collection of development funds, monitoring of compliance with agreements, implementation of activities, evaluation etc. Regulated or not, recent industry initiatives involve contributing to the social, economic and institutional development of host countries and communities. In practice, the companies are expected to go beyond mitigating social impacts, and work towards creating lasting benefits that sustain people beyond the life of a project.⁴⁹

Decommissioning, rehabilitation and mine closure

Extractive industries leave environmental and social damage in the communities where decommissioning, rehabilitation and mine closure are not properly managed. The effects depend on the type and size of the extractive activity, the location and surrounding areas, and the technology used. The larger the oil field or mine, the greater the impact, and these impacts are more complex when the activities occur near ecologically or socially sensitive areas. Rehabilitation is about putting the land or area that was impacted by extractive industries back into a sustainable, healthy and usable condition.

Lack of proper decommissioning and mine closure is a key risk in extractive industries, and the process is in itself a relevant source of negative environmental impact if not properly managed. Decommissioning, rehabilitation and closure is technical and complex, and insufficient funding is the largest barrier. The EI companies may have an interest in postponing the decommissioning phase. EI companies should ensure that they provide adequate plans and finances for rehabilitation and restoration of the environment throughout the lifecycle of the project, including progressive (ongoing) rehabilitation, rehabilitation in the closure phase, and rehabilitation of latent or residual impacts that may arise long after operations have ended.

There is a lack of global regulations and standards for decommissioning, rehabilitation and closure. It is the government's responsibility to ensure that petroleum or mining sites are not abandoned. Environmental laws should ensure that communities are protected and that companies are held accountable for environmental damage caused by extraction. Legal requirements for decommissioning and mine closure are often found in the petroleum or mineral act or in the environment act and regulations. The requirement will normally be for the licensee/contractor to submit to the ministry a *decommissioning plan* or *closure plan* either before obtaining an EIA licence or a specific amount of time before a licence expires or activities are expected to end. The plan must also contain information on costs and finances, management system, cessation alternatives and environmental and sustainability impact assessments, and contain a proposal for restoration of the land and waste management. The licensee/contractor shall establish a *decommissioning fund* large enough to cover the full costs of decommissioning, or provide another form of *financial assurance*. The licensee/contractor is responsible for *restoring* the affected area and removing the causes of damage or danger to the environment and the neighbouring communities. Governments must also make sure that there are local agencies with

⁴⁸ Deloitte, *Tracking the Trends 2019*.

⁴⁹ See for instance ICMM [Community Development Toolkit](#).

skilled people responsible for ensuring that closure is carried out as it should be. However, governments in many countries lack the capacity to implement closure plans.

Best practice is developed through international and regional initiatives aimed at governments and companies respectively. Recent best practices for governments and industry⁵⁰ all seem to indicate that good policy should include adequate financial assurance, update mechanisms (regular closure plan and financial assurance updates and approvals), transparency, and community and stakeholder engagement and participation. Within mining, the Asia-Pacific Economic Cooperation has developed a Mine Closure Checklist for governments, and the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development has developed a Mining Policy Framework. These can guide governments in developing and implementing a successful mine closure governance framework, and guide SAIs auditing government efforts to ensure proper mine closure.⁵¹

Local content, local employment and investment

The intention with local content requirements is to ensure that host country citizens benefit from resource extraction in their country. It also ensures that local firms get supply contracts that ensure sustainable growth and development. Many contracts and licences for the extraction of oil, gas or minerals have local content provisions. Local content is relevant not only for developing countries or for EI; local content policies are being drafted across the world, and across sectors. Some countries have developed general or sector specific local content policies, and some have local content laws. The provisions aim to maximise the economic opportunities of resource extraction to the host country and better ensure that benefits associated with resource extraction remain in the host country. Local content policies that are gender sensitive and do not create inequalities can also help to reduce discrimination and promote opportunities for women's participation in EI, reducing the risk of gender inequality in EI.

Local content requirements frequently used include ownership (often joint ventures with local firms), maximisation of local procurement (preferences given to sourcing from local companies), local transformation of beneficiation of raw materials, local employment at different stages of the value chain and of different levels of competencies (often involving requirements to support training) and local technology or research development.

⁵⁰ Recent examples of this are ICMM (2019) [Integrated Mine Closure – Good Practice Guide](#) and ICMM (2019) [Financial Concepts for Mine Closure](#).

⁵¹ See for instance APEC (2018) [Mine Closure Checklist for Governments](#) and IGF (2013) [Mining Policy Framework – Mining and Sustainable Development](#).

3.7.6. High-level audit considerations

To ensure that government performs its duties, the SAIs should consider:

The environment and society

- Whether government meets the commitments made in treaties, laws, policies and programmes;
- Government efforts to ensure EI companies' compliance with environmental and social laws and regulations;
- Efficient and effective management of funds for environmental and social monitoring;
- The process of assessing and approving environmental impact assessments and environmental social impact assessments;
- The effectiveness and adequacy of the system for regular monitoring, reporting and follow-up on environmental and social issues;
- Government preparedness.

Decommissioning, rehabilitation and mine closure

- Government agency's processing and review of closure plans, the adequacy of associated cost estimates and the management of financial assurance;
- Whether the processes followed by the regulator ensure timely and cost effective identification and rehabilitation of petroleum facilities or mine sites to minimise adverse social and environmental impacts;
- The regulatory framework's completeness in appointing roles and responsibilities in decommissioning and mine closure, including liability in the event of non-compliance by contract/licence holders.

Community development

- The contribution of community development agreements/plans and funds to ensuring that EI activities benefit the local communities;
- Community development plans' alignment with regional and national plans and policies.

Local content

- Whether the legal framework in their country has provided for local content requirements, and establish the comprehensiveness through benchmarking with countries that have a robust framework for local content;
- Assessing the effectiveness of the legal framework through auditing whether or to what extent the relevant government ministries, departments or agencies are monitoring the implementation of local content requirements.

Sustainable Development Goals

- The adaptation of the 2030 Agenda to the national context;
- Resources and capacities (means of implementation) needed to implement the 2030 Agenda;
- Mechanisms to monitor, follow up, review and report on the progress in implementing the 2030 Agenda.

4. Other risk areas and relevant audit considerations in EI

4.1. State-owned enterprises (SOEs)

State-owned enterprises (SOEs), often referred to as national oil companies (NOCs) in the oil and gas sector, play a variety of roles in different countries. These roles can include operating in the commercial sphere, regulatory responsibilities, creating policy, and financial expenditures. SOEs are not as widespread in the mining industry, but they do play a key role in a number of countries.

Many countries create SOEs that focus on the extractive sector with hopes of building the country's capacity to participate in the lucrative field of resource extraction, to increase the government's revenue take, and to improve the government's ability to monitor what other companies are doing in the country.

National oil companies (NOCs) control approximately 90% of the world's oil reserves and 75% of production (similar numbers apply to gas), as well as many of the major oil and gas infrastructure systems. Of the top 25 oil and gas reserve holders and producers, 18 are NOCs. In addition, an estimated 60% of the world's undiscovered reserves lie in countries where NOCs have privileged access to reserves. As such, NOCs are of great consequence to their country's economy, to importing countries' energy security, and to the stability of oil and gas markets.⁵² While some SOEs are extremely successful companies, others have trouble competing with international companies and demonstrating strong benefit to the populations they serve.

SOEs often have a role in selling the mineral or oil that is the state's share. The state could receive minerals or oil through a number of arrangements, including the NOC's own extraction, its ownership shares in a joint venture, participation in a production sharing agreement, and oil paid by companies to the government to cover their royalty or tax liabilities. In the past decade, the total value of NOCs' oil sales equalled 56% of combined government revenues for sub-Saharan Africa's top 10 oil producers.

The auditor should identify whether SOEs/NOCs exist in their country and what kind of role they play in the EI sector.

High-level audit considerations for SOEs

- Does the SOE/NOC play a role in contributing/collecting revenue that makes its way to the treasury?
- Does the SOE /NOC have any kind of monitoring role of the EI sector? If yes, what is its function in the monitoring process?
- Does the SOE/NOC have a regulatory role? If yes, how does it affect the audited entities and do the entities have to answer to the SOE/NOC or the government?
- Does the SOE perform more roles than what is considered best practice? If yes, which risks does this create?

⁵²<http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTOGMC/0,,contentMDK:21991336~pagePK:148956~piPK:216618~theSitePK:336930,00.html>

4.2. Illicit financial flows

The international illegal or illicit movement of money generated in developing countries has become a major issue in the development agenda. Reducing illicit financial flows (IFFs) is now a component of Goal 16⁵³ of the 2030 Sustainable Development Goals, as well as a staple of declarations from the G7 and G20.

The new prominence of IFFs is largely the result of the publication of estimates that these flows are extremely large (exceeding \$ 50 billion annually).⁵⁴ IFFs have five major sources (bribes, tax evasion, criminal enterprise earnings, corporate profit shifting and currency regulation evasion) and many channels for movement of the moneys (e.g. bulk cash smuggling, shell corporations, informal value transfer systems and trade-based money laundering). The release of the Panama Papers in April 2016⁵⁵ gave even greater popular prominence to this issue.

The United Nations Development Programme (UNDP) defines IFFs as follows: “IFFs include, but are not limited to, cross-border transfers of the proceeds of tax evasion, corruption, trade in contraband goods, and criminal activities such as drug trafficking and counterfeiting.” In the EI sector, these flows mostly originate from corruption, illegal resource exploitation and tax evasion (including smuggling and transfer mispricing).

4.2.1. Why IFF is an important matter

Most illicit activities represent a net loss for the region: countries and companies lose revenue, investment, markets and legitimacy, and citizens are disenfranchised, exposed to violence and health risks, and deprived of financial gains;

- Illicit activities and flows feed a vicious cycle of corruption, allowing groups or individuals in power to access resources that can be used to boost electoral campaigns, secure patronage and retain control;
- There are spill-over effects from illicit and criminal activities, such as increased instability, violence or even terrorism;
- The distinction between licit and illicit is often blurred. With few viable legitimate livelihood opportunities within the formal economy, these other forms of trade and industry – albeit illicit – are subsistence-level activities.

At the same time, these issues have so far been addressed as security problems. Yet, for AFROSAI-E member countries, as elsewhere, they are primarily a development concern. The perspective of the most vulnerable – the ordinary African citizen – is also a particularly important area of focus in elaborating the role of SAIs in this area.

⁵³ Goal 16.4 “By 2030, significantly reduce illicit financial and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organised crime”.

⁵⁴ <https://www.policyforum-tz.org/sites/default/files/MbekibriefingEngonlineversion.pdf>

⁵⁵ *The Panama Papers* refers to a cache of 11.5 million documents released on-line by the International Consortium for Investigative Journalism; the documents are from the files of a Panamanian law firm (Mossack Fonseca) that assisted in the creation of shell corporations in many jurisdictions. <https://panamapapers.icij.org/>

4.2.2. Illicit financial flow enablers

As per the High-Level Panel on Illicit Flows from Africa Report of 2013⁵⁶ IFFs are driven by several “push” and “pull” factors. The most obvious push factor driving IFFs is the desire to hide illicit wealth. The report cites four key drivers of IFFs as given below:

- Poor governance enables IFFs. Low capacity and/or competence in assessment, audit and collection of revenues opens up opportunities for transfer mispricing and tax evasion. A poor business environment may encourage IFFs when people find it easier to make money through illicit activities than through legitimate business. Weak regulatory structures may also be an important factor in post-conflict countries.
- Double taxation agreements (DTAs) can also enable IFFs. DTAs have a positive role in a number of respects, since double taxation can stifle economic activity and deter direct foreign investment, and agreements between countries to avoid such consequences have a place in necessary policy interventions. However, the benefit of such agreements depends on their provisions.
- Tax incentives⁵⁷ are another set of instruments with positive intentions that sometimes enable IFFs. Ordinarily, tax incentives are granted to encourage inward investment or the expansion of economic activity in general or in specific sectors. However, tax incentives are a major risk area for corruption and they can have a pernicious effect when abused.
- A major enabler or pull factor for IFFs from Africa is the existence of financial secrecy jurisdictions and/or tax havens.

Irrespective of how illicit financial transfers take place, the ultimate objective of the actors involved is to hide the proceeds from the public eye and law enforcement agencies.

4.2.3. Key illicit financial flows in the extractive industries

Attention needs to be given to IFF composition or the factors affecting variation across countries and over time, especially in the countries in the AFROSAI-E region. Baker’s original estimate attributed only about 5% to corruption, with most of the flows coming from “commercial activities”; criminal earnings accounted for about 33% of IFFs in commercial activities. Baker’s findings are consistent with the conclusions of the High-Level Panel on Illicit Financial Flows from Africa (2015) also known as the Mbeki report on IFFs, which asserted that only 5% of African IFFs came from corruption and that most came from corporate activities. According to the Global Financial Integrity (GFI) estimates which are largely credited as the foremost method of sighting IFFs, the share involving trade mispricing was estimated to be over 80% in the 2015 publication (Kar and Spanjers, 2015), compared to less than 44% when estimates were made in 2011 (Kar and Freitas, 2011), perhaps as a consequence of a change in methodology as Nitsch (2016) argues on shifts in the implementation details by GFI over the years. It

⁵⁶ Report of the High-Level Panel on Illicit Financial Flows from Africa commissioned by the AU/ECA Conference of Ministers of Finance, Planning and Economic Development

⁵⁷ <https://www.taxjustice.net/2019/01/03/ineffective-tax-incentives-on-profits-heavily-used-by-african-nations-compared-to-european-nations-study-finds/>

can however be concluded that commercial activities remain the largest contributor to IFFs, despite the method used to estimate IFFs.

Abusive transfer pricing (transfer mispricing)

Transfer pricing happens whenever two companies that are part of the same multinational group trade with each other. Transfer pricing is not illegal or necessarily abusive. What is illegal or abusive is transfer mispricing, also known as transfer pricing manipulation or abusive transfer pricing. (Transfer mispricing is a form of a more general phenomenon known as trade mispricing, which includes trade between unrelated or apparently unrelated parties – an example is re-invoicing). It is estimated that in EI around 70% of international trade happens within, rather than between, multinationals; that is, across national boundaries but within the same corporate group.

Estimates vary as to how much tax revenue is lost by governments due to transfer mispricing. See example as per [Tanzania case studies](#) by Hon. Zitto Kabwe, MP. African tax administrations (ATAF) report that TP represents one of the highest risks to their tax bases. Having effective TP legislation is a key element in African countries' fight to combat abusive TP practices and is also important in providing taxpayers with greater tax certainty and encouraging voluntary compliance.

Tax evasion

Tax evasion is the illegal evasion of taxes by individuals, corporations and trusts. Tax evasion often entails taxpayers deliberately misrepresenting the true state of their affairs to the revenue authorities to reduce their tax liability and includes dishonest tax reporting, such as declaring less income, profits or gains than the amounts earned, or overstating deductions.

Tax avoidance in EI generally takes place in the grey area between legality and illegality – such as when multinational entities shift profit to companies in tax havens – whereas tax evasion/fraud involves the overt breaking of laws. The organisation [Global Financial Integrity](#) estimates that Mauritania loses 12% of its GDP to such activity, Chad 20%, and the Republic of Congo 25%. As a result, IFFs both damage African states and hold back their industrialisation and development.

Tax evasion is criminal but tax planning and tax avoidance are normally defined as legal activities. Multinational companies and their assistants will therefore be prone to describe their activities as legal tax planning until they are stopped by a relevant authority through a thorough tax audit that concludes by identifying the particular tax scheme as tax evasion, see figure 9 below.

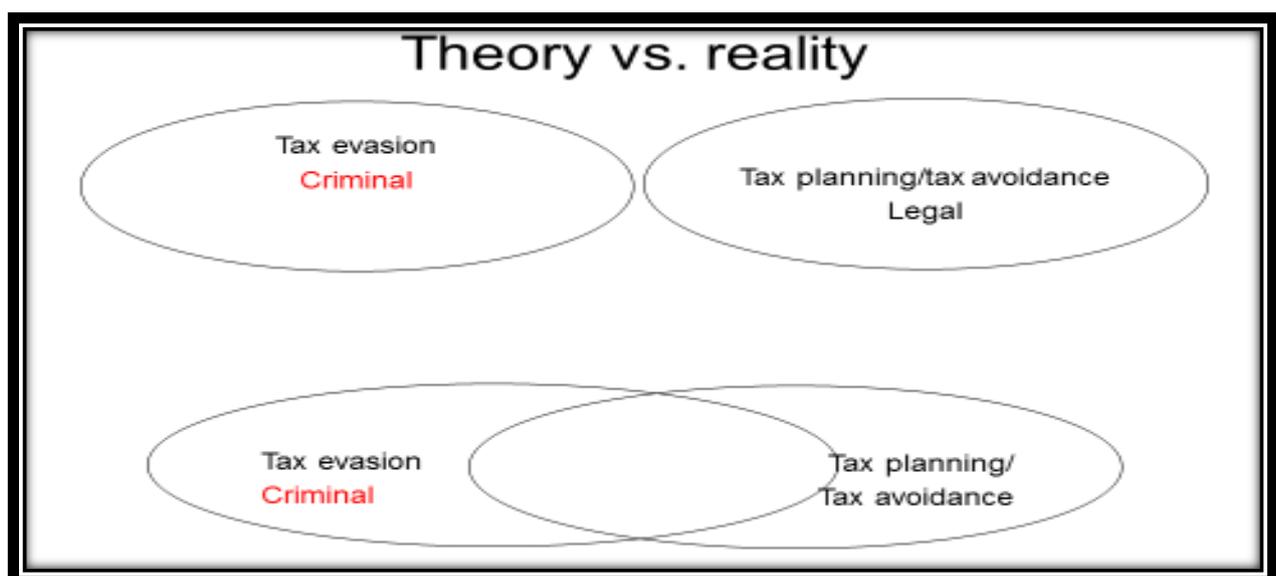


Figure 9: Theory vs. reality

Money laundering

Money laundering is the act of concealing the transformation of profits from illegal activities and corruption into ostensibly "legitimate" assets. Money laundering is rife in Africa. Because of the hugely cash based and often informal economies, criminals can move dirty money across borders, concealing its source and making it clean. As many African countries are rich in either oil or precious stones, these commodities are frequently used to move funds around the continent.

Money laundering involves three steps:

1. The first involves introducing cash into the financial system by some means ("placement");
2. The second involves carrying out complex financial transactions to camouflage the illegal source of the cash ("layering"); and
3. Finally, acquiring wealth generated from the transactions of the illicit funds ("integration").

Some of these steps may be omitted, depending upon the circumstances. For example, non-cash proceeds that are already in the financial system would not need to be placed.

Illegal transactions or financial discrepancies can take place anywhere in the world. There is, however, a lower risk of detection in African countries because the compliance programmes are often not as robust as they should be and, in some cases, simply ineffective. Several initiatives have been adopted with the goal of minimising money laundering, both in the world and in Africa specifically. The Eastern and Southern Africa Anti-Money Laundering Group (ESAAMLG⁵⁸) aims to combat money laundering in Eastern and Southern Africa by studying emerging money-laundering typologies, developing capacities and coordinating technical assistance.

4.2.4. Existing efforts to combat illicit financial flows

Illicit financial flows have both a source country and a destination country; they often also involve transit countries.⁵⁹ Transit countries are primarily wealthy nations, since they offer secure facilities, a wide range of investment opportunities and political stability. Destination countries may often be a tax haven where the beneficial owner controls the shifted profits. A tax haven may provide the beneficial owner with desired secrecy or low tax or both. The flows can best be stemmed by internationally coordinated actions involving both source, transit and destination countries, as reflected in the resolutions of the G20 on the issue of IFFs. There are five main interventions explicitly aimed at reducing IFFs:⁶⁰

1. Anti-money laundering (AML) laws and programmes. These attempt to (a) prevent offenders from turning illegally generated moneys into legal funds that can be used for any investment or consumption purpose and (b) use the effort to launder moneys to apprehend and punish offenders, including those professionals who help the primary offenders move, conceal or transform the proceeds of crime. Almost all nations have in place laws and institutions that have received some degree of approval from the Financial Action Task Force (FATF), a G7-created entity that sets the rules for such matters.
2. Stolen asset and recovery procedures. A range of laws and programmes aim to facilitate the return of assets stolen from national coffers by corrupt officials.
3. Automatic exchange of information between countries. Under these international treaties/agreements, each country's banks are required by law to provide revenue authorities

⁵⁸ Members of ESAAMLG are Angola, Botswana, Comoros, Kenya, Lesotho, Malawi, Mauritius, Mozambique, Namibia, South Africa, Swaziland, Seychelles, Tanzania, Uganda, Zambia and Zimbabwe.

⁵⁹ See Tax Justice Network *Financial Secrecy Index* <http://www.financialsecrecyindex.com/introduction/fsi-2015-results>

⁶⁰ 2015 Financing for Development Commitment on IFFs: to "substantially reduce and eventually eliminate IFFs".

with information about all accounts. Then each country exchanges such information on accounts that are held by that country's residents.⁶¹

4. The development of new rules regarding country-by-country reporting of corporate profits, intended to prevent corporate profit-shifting abuses; see OECD (2015).⁶²
5. The development of ownership registries, which may hamper secrecy of ownership of financial assets and a broad array of real assets. In reality, the existence and use of tax havens will in many cases hamper the ability of governments and civil society to disclose the beneficial owner.⁶³ The beneficial owner is the individual who ultimately controls or profits from a company.

4.2.5. High-level audit considerations

Every aspect of IFFs has a connection with the problems of poor governance. SAIs remain at the pinnacle of good corporate governance in the public sector, hence they have a role to play in addressing IFFs in EI. Government agencies should also work together and communicate with one another. The following considerations should be kept in mind when performing audits in EI:

- Acquire information and an understanding of how these outflows occur in the EI sector;
- Consider the options to access available data for evaluating realistic and accurate volumes and sources of the outflow;
- Government policy, legal framework and monitoring of IFF along the value chain;
- If possible, identify whether EI companies have controls in place to prevent IFF;
- Understanding of binding international law and treaties (transparency, money laundering, beneficial ownership and exchange of information);
- Ministry of Finance and revenue authority policies and actions to mitigate transfer mispricing;
- Scrutinise contracts and agreements between government and EI companies for incentives and assess the economic impact on government revenues.

4.3. Fraud and corruption

Two main factors are often blamed for the scarcity of tax revenues from EI. First, unfavourable contracts and licence agreements tend to ensure that the larger portion of profit flows to multinational companies instead of generating revenue for the government and for the benefit of the citizens. Secondly, the high level of perceived risk of fraud, corruption and theft associated with the sector brings a focus for international good governance and anti-corruption initiatives.

Corruption – As per definition in the OECD, corruption involves behaviour on the part of officials in the public sector, whether politicians or civil servants, in which they improperly and unlawfully enrich themselves, or those close to them, by the misuse of the public power entrusted to them.

⁶¹ <http://www.oecd.org/tax/exchange-of-tax-information/>

⁶² <http://www.oecd.org/tax/transfer-pricing/transfer-pricing-documentation-and-country-by-country-reporting-action-13-2015-final-report-9789264241480-en.htm>

⁶³ https://www.transparency.org/whatwedo/publication/recommendations_on_beneficial_ownership_transparency_for_ogp_national_action

Fraud – An intentional act by one or more individuals among management, those charged with governance, employees, or third parties, involving the use of deception to obtain an unjust or illegal advantage.⁶⁴

Fraudulent or corrupt practices may relate to:

- Unfair allocation of area or block for exploration;
- Lack of transparent, competitive and non-discretionary procedures for the award of exploration, development and production rights. This may result in a situation where the fact that some bidder(s) may be favoured over others can go unnoticed and unpunished;
- Discretionary authority to grant tax holiday, tax incentives and other waiving/derogating exemptions or benefits that deviate from the legal framework;
- Transfer mispricing, undertaking transactions with related parties at prices other than arm’s length.

Given the significant revenue that is generated from the EI sector it is essential to have reliable financial systems and transparent contract management to mitigate the risk of corruption. If these are not in place, corruption can easily take root. Weak legal, regulatory and contractual frameworks and the lack of well-defined institutional responsibilities may present opportunities for corruption or fraud to occur under the radar for long periods. Corruption may be structural by designing the system in a way that reduces transparency and accountability. The auditor must assess how system failures allow for corruption at all levels of government. Some red flags might indicate a high prevalence of fraudulent activities in the sector.

Table 8: Red flags for fraud and corruption

| CONSIDERATIONS / ELEMENTS | RED FLAGS INDICATING FRAUD AND CORRUPTION |
|------------------------------|--|
| Policies and legal framework | <p><u>Outdated legal framework</u></p> <p>The legal framework may be outdated. In one African country, it was revealed that the Petroleum Act was 40 years old, therefore reducing its relevancy. This makes fraudulent activities more prevalent since it may not be apparent that any law has been breached.</p> <p><u>Discretionary authority to deviate/derogate/waive from legal framework</u></p> <p>Decisions to grant tax holiday, tax incentives or other exemptions or benefits.</p> |

⁶⁴ ISSAI 1240

| CONSIDERATIONS / ELEMENTS | RED FLAGS INDICATING FRAUD AND CORRUPTION |
|--|--|
| Government activities/ decisions regarding natural resources and exploration | <p><u>No proper use of databank</u></p> <p>When the bidding process is announced government should ensure a fair distribution of information on the possible petroleum and gas reserves in the exploration blocks. Routines for feeding data from seismic surveys/exploration activities into the databank may be poor, leading to an opportunity to commit fraud. This is when information may be excluded from the databank and sold to companies that are willing to pay for the information.</p> <p>Companies may also be reluctant to share their seismic data with government, which creates asymmetry of information between the two parties. Reluctance to part with important information may be due to suspected weak systems and/or corruption in government.</p> |
| Award of contracts and licences | <p><u>Complex and unclear bidding criteria</u></p> <p>This makes it difficult to bid with accuracy and to know how the criteria will be applied in choosing between candidates. It clears the way to award contracts to parties willing to pay bribes to be accepted. If the criteria are spelled out in an objective manner, and their weighting is clear, there is more accountability, making it more difficult to choose unfit companies.</p> <p>When companies without ability to meet the criteria are given the licence, they may opt to sell the rights to another company who can perform according to the contract. Proceeds from selling the licence are then shared with government official(s) that granted the licence.</p> |
| | <p><u>No pre-qualification rounds</u></p> <p>Without pre-qualification rounds government can be overwhelmed by numerous applications by companies with varying degrees of reliability. Companies may be established with the purpose of reaping the short-term benefits of acquiring a contract. They may have close links to policy makers. Ideally, only reliable companies with a solid reputation, when it comes to technology, finance and experience, should pass the pre-qualification round.</p> |
| | <p><u>Information on exploration blocks not disseminated</u></p> <p>There is unequal access to information on the announced blocks for exploration. Only companies that are willing to pay bribes to government officials get access to information that has significant market value.</p> |
| | <p><u>NRGI, Corruption risks: twelve red flags⁶⁵</u></p> <ol style="list-style-type: none"> 1. The government allows a seemingly unqualified company to compete for, or win an award. 2. A company or individual with a history of controversy or criminal behavior competes for, or wins, an award. |

⁶⁵ National Resource Governance Institute: <https://resourcegovernance.org/analysis-tools/publications/twelve-red-flags-corruption-risks-award-extractive-sector-licenses-and>

| CONSIDERATIONS / ELEMENTS | RED FLAGS INDICATING FRAUD AND CORRUPTION |
|--|---|
| | <p>3. A competing or winning company has a shareholder or other business relationship with a politically exposed person (PEP), or a company in which a PEP has an interest.</p> <p>4. A competing or winning company shows signs of having a PEP as a hidden beneficial owner.</p> <p>5. An official intervenes in the award process, resulting in benefit to a particular company.</p> <p>6. A company provides payments, gifts or favours to a PEP with influence over the selection process.</p> <p>7. An official with influence over the selection process has a conflict of interest.</p> <p>8. Competition is deliberately constrained in the award process.</p> <p>9. A company uses a third-party intermediary to gain an advantage in the award.</p> <p>10. A payment made by the winning company is diverted from the appropriate government account.</p> <p>11. The agreed terms of the award deviate significantly from industry or market norms.</p> <p>12. The winning company or its owners sell out for a large profit without having done substantial work.</p> |
| <p>Monitoring of operations – exploration and production</p> | <p><u>No reliable data on production figures</u></p> <p>Often, the total volume of production may not be known, or the information may not be reliable. For example, the total volume of petroleum and gas production in Nigeria remains a mystery. Estimates are not based on what was pumped from the wells and flow stations, but rather on what arrives at terminals and off-take points. This renders it possible for persons to steal crude petroleum on its way to the terminals, without being detected.</p> <p><u>Health, environment and safety</u></p> <p>Companies may offer bribes to monitoring and controlling agencies and receive leniency regarding the application of regulatory requirements. Companies might be given permission to operate petroleum rigs that do not comply with basic safety regulations, and which have negative impact on the environment.</p> |
| <p>Revenue assessment and collection</p> | <p><u>Discrepancy between tax return/assessment and payments</u></p> <p>The companies will declare to have paid certain amounts of tax and royalties. These payments may not fully reach the central bank. Is it a lack of checks and balances or were these amounts simply leaking along the way or overlooked? This issue brings the integrity of tax officials into question.</p> |

| CONSIDERATIONS / ELEMENTS | RED FLAGS INDICATING FRAUD AND CORRUPTION |
|-----------------------------------|--|
| | <p><u>Flaws/shortcomings in the assessment/collection systems or faulty internal controls</u></p> <p>The revenue authorities do not operate with double entry bookkeeping or maintain a cashbook or a general ledger. This makes it difficult to reconcile their own figures with the companies' own assessments of exploration costs, fixed assets and production figures. This means if any discrepancy between the two was a result of corruption and theft, it is difficult to detect.</p> <p><u>Lack of discipline, both in management and executive work</u></p> <p>Auditors should also be aware that the systems are often blamed for discrepancies where simple checks would result in full reconciliations.</p> <p><u>Limited oversight</u></p> <p>The financial flows that are generated by the petroleum and gas revenue are not being tracked by a body such as the Accountant-General. The flows are left outside government information and management systems.</p> <p>Insufficient or inadequate reconciliation of revenue payments and accounts.</p> <p>Deals between top government officials and the petroleum and gas companies can be made which ensure that some of the financial flows end up in private hands.</p> |
| Revenue management and allocation | <p><u>Sale of natural resources is not transparent</u></p> <p>Sales and marketing information on natural resources is not always made available. For example, it is unclear how the crude petroleum is priced or what the basis is for choosing certain buyers.</p> |

4.4. Cyber security

The fourth industrial revolution, a term coined by Klaus Schwab, founder and executive chairman of the World Economic Forum, describes a world where individuals move between digital domains and offline reality with the use of connected technology to enable and manage their lives (Miller 2015, 3). The Fourth Industrial Revolution is building on the Third, the digital revolution that has been occurring since the middle of the last century. It is characterised by a fusion of technologies that is blurring the lines between the physical, digital and biological spheres. When compared with previous industrial revolutions, the Fourth is evolving at an exponential rather than a linear pace. Moreover, it is disrupting almost every industry in every country. The breadth and depth of these changes herald the transformation of entire systems of production, management and governance (Schwab 2015).

4.4.1. Drivers shaping the future of production

As per the World Economic Forum (2017), six drivers are shaping the future of production, see figure 10. The extractive industries feature under natural resources and sustainability. As such, it can be concluded that EI is a vital cog in the future of production.

Under the fourth industrial revolution, EI has been going through a wrenching period of change in which operational efficiency through digitisation has become a more than common feature. The extractive industry is becoming increasingly complex from a technological standpoint. More than ever before, it relies heavily on industrial control systems (ICS) and supervisory control and data acquisition (SCADA) that leverage IT to control physical machinery and supervisory management, respectively. This may lead to more efficiency, but it also makes systems more vulnerable to the risk of cyber attacks.



Figure 10: The six drivers shaping the future of production

Under these conditions, opportunities for cyber criminals are multiplying. Not surprisingly, in recent years the oil and gas industry has been targeted by several high-profile cyber attacks. The PwC Global State of Information Security Survey 2017 found that globally, oil and gas respondents detected an average of 7 432 cyber security incidents in the past twelve months. According to the Ponemon Institute (2017), on average, 46% of cyber-attacks is believed to go undetected, and nearly 70% of oil and gas companies were hacked in the past 12 months. It is further noted that the motive behind cyber attacks on EI can range from being malicious, economically disruptive and profit motivated to being politically driven.

4.4.2. How and where cyber breaches impact the EI

| Upstream | Middle stream | Downstream |
|---|--|---|
| <ul style="list-style-type: none"> • Manipulating field device parameter settings • Interfering with key safety controls and measures • Theft of intellectual property such as geological data, production information and bidding documents | <ul style="list-style-type: none"> • Unauthorised access to and manipulation of relieve valves, compressors and manually overriding automatic shutdowns in pipelines • Altering automated storage gauge controls and alarms (level, temperature, pressure) | <ul style="list-style-type: none"> • Controlling automated gauges at retail stations • Theft of customer credit card and sales data • Tampering with market data and transaction systems |
| <p>Key business risks posed by cyber attacks</p> <ul style="list-style-type: none"> • Damage to critical infrastructure • Environmental damage • Operational shutdown • Plant sabotage • Utilities interruption • Production disruption • Product quality (inferior oil or gas quality) • Undetected spills • Illegal pipeline tapping • Safety incidents (death or injury) • Financial loss • Reputational damage • Market disruption • National security | | |

Figure 11: Cyber breaches' impact on oil and gas production streams

4.4.3. High-level IT audit considerations

Cyber security is not just about technology – it also involves protecting people, information, systems, processes, culture and physical surroundings. Cyber security aims to create a secure environment where businesses can remain resilient in the event of a cyber attack. An investment in cyber security can foster innovation, enhance agility, facilitate business growth, build trust and enhance the competitive advantage of companies in EI. The auditor should obtain information from the auditees/government entities by asking the following questions:

- Does the organisation have a cyber response plan in the event of an attack?
- Does the organisation have a cyber-attack risk assessment which reveals cyber vulnerabilities and threats across people, systems, processes and operations?
- Has the organisation instituted effective training programmes that instruct employees on the appropriate handling and protection of sensitive data?
- How often does the organisation through its governance structures discuss and review its cyber security defences and policies?

5. Annexures

5.1. Annex 1: Background on the extractive industry sector

This annex provides a detailed background on the main features of the oil and gas and solid mineral mining environment. Through extensive research, the annex gives both current and future perspectives of developments in the industry through various examples from the African continent.

The annex also covers the issue of artisanal mining.

Overview of the petroleum and gas industry⁶⁶

The oil and gas industry in Africa continues to show substantial growth, with new hydrocarbon provinces developing at a significant pace. Large gas finds in Mozambique and Tanzania have caused the world to take note of East Africa as an emerging player in the global industry. According to PwC (2017)⁶⁷ Africa has proven natural gas reserves of 502 trillion cubic feet (Tcf) with 90% of the continent's annual natural gas production of 6.5 Tcf coming from Nigeria, Libya, Algeria and Egypt.

To date, the African oil and gas industry continues to play catch-up with the rest of the world. Despite the potential of the industry, several challenges still hamstring the oil and gas industry in Africa from flourishing. While some are industry-generic challenges, most are geopolitically driven. The internationally sustained low oil price means organisations need to continue to manage costs/spend efficiently. This is made more important as we begin to see capex increases return in the oil and gas industry. Such severe cost-cutting regimes pose challenges to the auditors as they are red-flag areas for accounting fraud and error.

Although over the years the industry and its leaders have been viewed as laggards to change, recently the oil and gas industry has not been spared the upheavals of disruptive technology. In a changing competitive landscape, driven by alternative fuels, technology, cost-cutting and partnerships, oil and gas companies need to review their strategic portfolio of activities to ensure appropriate positioning as the competitive landscape changes. For the auditor this requires more audit focus on the going concern of some of these oil companies, as the efficiency and sustainability of some business models are being challenged.

The cost per barrel of crude oil is quoted in US\$ while the functional and reporting currencies of most oil and gas companies in Africa are in their local currency. With financing costs, foreign currency and currency devaluation continuing as key issues for the industry in the African context, organisations should consider developing more sophisticated finance capabilities. This inevitably makes the financial reporting process more complex for the auditors and a breeding ground for fraud and corruption. As corruption continues to be a phenomenal key factor in the industry, entities need to ensure that strong, ethical leadership drives the right behaviours across the organisation.

Current status

A report from PwC – South Africa 2017 Oil & Gas Africa Report – states that in spite of the new discoveries in oil and gas, Africa's share of global oil production has continued its downward trend in the past four years, dropping sharply, moving it from 9.1% of global output last year to 8.6%. Proven oil reserves in the region are estimated at 7.5% of global, a 0.1% drop from 2016 totals.

⁶⁶ <https://www.pwc.co.za/en/assets/pdf/africa-oil-and-gas-review-2018.pdf>

⁶⁷ PwC – South Africa 2017 Oil & Gas Africa Report

Global oil and gas industry reports continue to hint that the drop in African production was sizeable in many jurisdictions, with production in Nigeria and Congo dropping 11.9% and 7.6% respectively. In South Sudan, despite it being one of the most oil dependent countries in the world, there was a 20% drop in production between 2015 and 2016. This is due to the continued disruption from civil war in the territory as well as ageing production facilities. There are only two notable countries where production increased with Algeria growing by 1.4% and Chad increasing by a mere 0.6%.

As exploration activity has waned, this result was foreseeable. Despite this reduction, recent large finds include: Owowo in Nigeria with a potential of one billion barrels of oil, Cayar in offshore Senegal/Mauritania with approximately 15 Tcf of gas and Block 20/21 in Angola with around 313 million barrels of condensate and 2.8 Tcf of gas. Globally, the oil discovery count was down to 174, the lowest level for 60 years.

The future of petroleum and gas production

Exploration is taking place in several other countries that aim to increase their output or become first-time producers. Included in this list are Chad, Sudan, Namibia, South Africa, Madagascar and Uganda while Mozambique and Tanzania are potential gas producers.

Table 5.1: Oil and gas discoveries

Top 10 oil & gas discoveries in 2016

| Asset | Country | Region | Operator | Type | On/ Offshore | Resources (Mbbbl) |
|---|---------------|----------------|-----------------------------|---------|-----------------|----------------------|
| Woodford & Barnett Shale (Alpine High) – Permian Delaware | United States | North America | Apache | Gas | Onshore | 944 |
| Katambi | Angola | West Africa | BP | Gas | Offshore | 699 |
| Woodford & Barnett Shale (Alpine High) – Permian Delaware | United States | North America | Apache | Liquids | Onshore | 629 |
| Teranga | Senegal | West Africa | Kosmos Energy | Gas | Offshore | 529 |
| Al-Jathatheel | Kuwait | Middle East | Kuwait Petroleum Corp (KPC) | Liquids | Onshore | 419 |
| Ahmeyim | Senegal | West Africa | BP | Gas | Offshore | 417 |
| Golfinho | Angola | West Africa | Cobalt International Energy | Liquids | Offshore | 272 |
| Jerun | Malaysia | Southeast Asia | Sapurakencana Petroleum | Gas | Offshore | 250 |
| Zalophus | Angola | West Africa | Cobalt International Energy | Gas | Offshore | 245 |
| Anye Shale | China | East Asia | Sinopec | Gas | Onshore | 244 |

Source: Rystad Energy

In emerging petroleum- and gas-producing countries, there is an ongoing process to consolidate and design management of the petroleum sector. This is a difficult and often controversial process, creating conflicts between different interest groups and even increasing uneven levels of power and resources among stakeholders. This process calls for a new legislative framework, such as a petroleum act, the establishment of new agencies, acquiring new technology and competence. SAIs can potentially play a

critical role in ensuring that the extraction process follows internationally accepted best practice and that the resources are being used for the public good.

Overview of the mining sector

Depending on how well mining policies and frameworks are developed, the mining sector will be biased toward either exerting a positive or a negative influence on development in countries with mineral resources. Depending on natural resource abundance, industry development and market conditions, revenues from the extraction of minerals can make up a large portion of a national or regional economy. In Sierra Leone and Mozambique, for example, the value of mining production in 2014 represented approximately 54% and 38% of national gross domestic product, respectively.⁶⁸

Mining can provide the government with budgetary resources that would be necessary for poverty reduction programmes and that can have the potential to be significant catalysts for further private sector development in the region or country.

Mining is likely to contribute to the development of the economy of any country, through taxes from large-scale mining companies that contribute to socio-economic infrastructural development within the area where the mine is located; creating employment opportunities both directly in the mines and indirectly through services to the mines; improving human capital through the provision of education and health services; increasing foreign exchange reserves (reducing foreign exchange deficit); improving infrastructure like roads and water supply; and creating other economic activities to support the mines instead of importing all supplies from abroad.

On the other hand, the supply of metals and minerals is not without environmental and social costs. The effects of mining continue long after the mine has stopped operating. Poor mining and mineral processing practices can poison the air, land and water and then leave the environment to suffer a slow death. Many rivers have been pronounced “biologically dead” due to release of mine tailings (waste from the mine containing rocks, metals and poisons) into lakes and waterways. The minerals sector also has challenges of lack of transparency and corruption, which if not well managed can be detrimental to any country.

Africa alone has about 30% of the world’s mineral reserves (source: World Bank website April 2018). According to the 2018 edition of the U.S. Geological Survey (USGS) Mineral Commodity Summaries, the following African countries have substantial mineral reserve deposits:

Table 5.2: African countries with substantial mineral reserves

| Country | Mineral | Global ranking | Known reserves | Unit of measure |
|----------|----------------|----------------|----------------|----------------------|
| Algeria | Helium | 2nd | 1,800 | Million cubic meters |
| Algeria | Phosphate rock | 3rd | 2,200,000 | Thousand metric tons |
| Botswana | Diamond | 2nd | 14,000 | Million carats |
| Botswana | Soda ash | 4th | 400,000 | Thousand metric tons |
| DR Congo | Cobalt | 1st | 3,500,000 | Metric tons |
| DR Congo | Copper | 7th | 20,000 | Metric tons |
| DR Congo | Tin | 2nd | 800,000 | Thousand metric tons |

⁶⁸CAAF Guide to Auditing Mining Revenues and Financial Assurances for Site Remediation, July 2017

| Country | Mineral | Global ranking | Known reserves | Unit of measure |
|----------------|----------------|-----------------------|-----------------------|------------------------|
| Mozambique | Zirconium | 4th | 1,800 | Metric tons |
| Namibia | Rubidium | 1st | 50,000 | Metric tons |
| Saudi Arabia | Sulphur | 6th | 4,900 | Metric tons |
| South Africa | Gold | 2nd | 6,000 | Metric tons |
| South Africa | Manganese | 1st | 200,000 | Thousand metric tons |
| South Africa | Nickel | 7th | 3,700,000 | Metric tons |
| South Africa | Platinum | 1st | 63,000,000 | Kilograms |
| South Africa | Ilmenite | 4th | 63,000 | Thousand metric tons |
| South Africa | Rutile | 3rd | 8,300 | Thousand metric tons |
| South Africa | Vanadium | 3rd | 3,500 | Metric tons |
| Tanzania | Graphite | 4th | 17,000 | Thousand metric tons |
| Zambia | Copper | 7th | 20,000 | Metric tons |
| Zimbabwe | Lithium | 8th | 23,000 | Metric tons |

Source: <https://minerals.usgs.gov/minerals/pubs/mcs/2018/mcs2018.pdf>

Artisanal mining

Artisanal mining refers to mining by individuals, groups, families or cooperatives with minimal or no mechanisation, often in the informal sector of the market. About 100 million people – workers and their families – depend on artisanal mining compared to about 7 million people worldwide in industrial mining. The World Bank estimates that the number of artisanal miners in Africa has grown from about 10 million in 1999 to about 30 million in 2016.⁶⁹

Artisanal mining activities can have a severe impact on the social, physical and ecological environments. This type of mining often has serious environmental consequences, especially gold mining due to the use of mercury and cyanide without protective gear. In addition, the artisanal miners face the risk of falling into unprotected pits, leading to many injuries and deaths. Small-scale mining also comes with a set of problems associated with “unplanned gold rush villages”, including an almost complete lack of sanitation, clean water, education and medical care.

Box 5.1 Case example:

Monitoring exposure of fish and humans to mercury due to gold mining in the Lake Victoria goldfield, Tanzania

According to a study carried out by the University of Dar es Salaam in Tanzania, it is estimated that about 250,000 people are involved in small-scale gold mining in three principal gold fields, namely the Lake Victoria goldfields around Lake Victoria.⁷⁰ There is potential risk of human exposure to inorganic mercury because of the extensive use of mercury in gold recovery in the Tanzanian goldfields. Furthermore, inorganic mercury released into river systems during gold ore processing is likely to be gradually transformed into the highly toxic form of methyl mercury and become concentrated through bio magnifications in aquatic food chains, particularly in fish.



High-level audit considerations on artisanal mining

SAs should conduct audits to establish whether:

- i. The government has laws and regulations in place to govern the operations of artisanal mining;
- ii. Relevant ministries and government agencies are ensuring that artisanal miners comply with laws and regulations on artisanal mining, where this legal framework has been set up;
- iii. The government is taking action on artisanal miners with regard to pollution of waterways through mercury use, dam construction, a build-up of silt, poor sanitation and effluent dumped in rivers;
- iv. The government has acted to reduce the risks to which artisanal miners are exposed, for instance, use of mercury and cyanide in gold extraction and working without the required personal protective equipment;
- v. Abandoned mines are being rehabilitated, as many artisanal miners have lost their lives while mining in old mines that have been left open due to improper mine closure and lack of reclamation.

In the case of environmental audits of artisanal mining where there are no laws and regulations to uphold mining operations, the auditor in carrying out such audits is expected to apply criteria like: estimated environmental costs, liabilities and risks associated with artisans’ mining sites, systems of establishing priorities and management of mines opened by artisans, comprehensive plans for legalisation through registering the artisans and issuing them with licences in order to adhere to environmental laws and regulations.

⁶⁹ <https://www.economist.com>

⁷⁰ WGEA Mining Guide, 2010

The future of the mining sector

According to the international study group report on Africa's mineral regimes, Africa is well endowed with mineral resources and has a long history of mining. However, Africa has so far not reaped the developmental benefits of these resources. This is largely due to the weak integration of Africa's mining sector into national economic and social activities.

The African Union (AU) heads of state and government have taken deliberate steps to address this weakness. This has been done through the endorsement of the Africa Mining Vision (AMV) and the establishment of the African Minerals Development Centre (AMDC) to provide strategic operational support for the vision and its action plan. The Africa Mining Vision was adopted by heads of state at the February 2009 AU summit following the October 2008 meeting of African ministers responsible for mineral resource development. It is Africa's own response to addressing the paradox of great mineral wealth existing side by side with pervasive poverty.⁷¹

The AMV advocates thinking outside the "mining box". Accordingly, it's not just a question of improving mining regimes by making sure that tax revenues from mining are optimised and that the income is well spent – although that is clearly important. Rather it's a question of integrating mining much better into development policies at local, national and regional levels. That entails thinking about how mining can contribute better to local development by making sure workers and communities get real benefits from large-scale industrial mining and that their environment is protected. It also means making sure that nations can negotiate contracts with mining multinationals that generate fair resource rents and stipulate local inputs for operations. At regional level, it means integrating mining into industrial and trade policy.

The African Mining Vision action plan was developed in December 2011. The action plan comprises nine programme clusters of activities constructed around the key pillars of the vision. These are mineral rents and management, geological and mining formation systems, building human and institutional capacities, artisanal and small-scale mining, mineral sector governance, research and development, environmental and social issues and linkages and diversification. Auditors can find more information on the activities involved in the nine programme clusters on <http://www.africaminingvision.org/>.

Most importantly, it's ensuring that Africa can move from its historic status as an exporter of cheap raw materials to manufacturer and supplier of knowledge-based services. It is therefore expected that through the implementation of the African Mining Vision action plan by the African Minerals Development Centre, African countries will begin reaping impactful developmental benefits from resources in their countries in the near future.

A SAI can conduct performance audits to establish the level of implementation of the AMV action plan. This is also an area where SAIs can consider conducting collaborative audits, as many African countries are expected to be implementing the action plan.

The case of Africa's largest copper discovery in the Democratic Republic of Congo

According to international mining consultant Wood Mackenzie, the Kamoia-Kakula Copper Project in the Democratic Republic of Congo is regarded as Africa's largest, high-grade copper discovery and the world's biggest, undeveloped high-grade copper discovery with an indicated resource of approximately 740Mt. The deposit is located within the Central African Copper belt and forms a part of the interpreted extension of the Western Foreland unit of north-western Zambia.⁷²

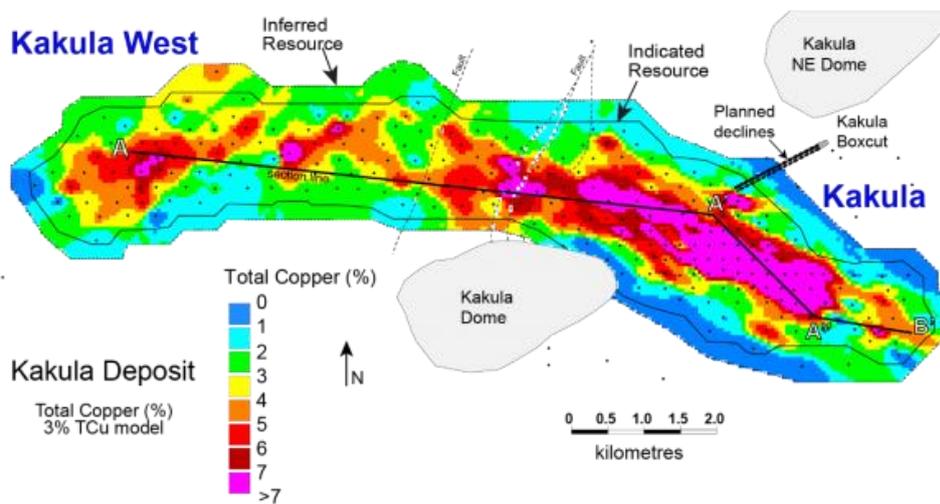
⁷¹ <http://www.africaminingvision.org/>

⁷² <https://www.wallstreet-online.de>

<http://www.miningweekly.com>

<http://www.ivanhoemines.com>

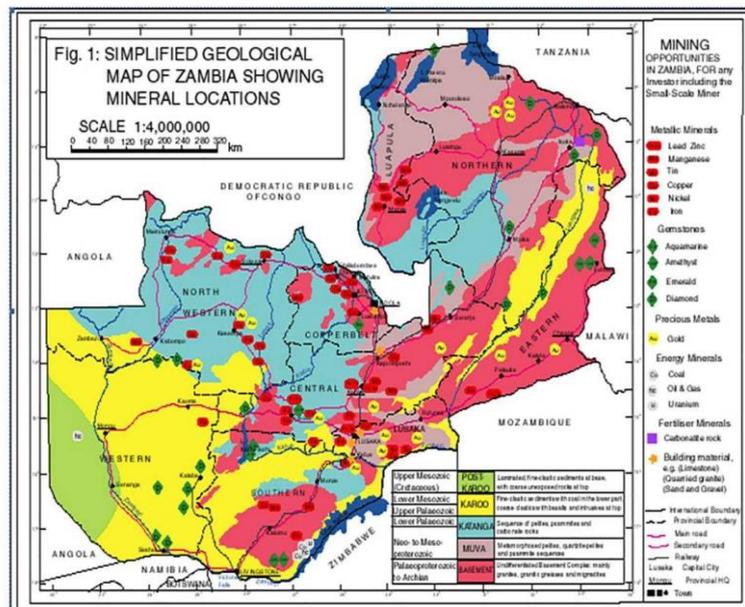
Kakula and Kakula West discovery areas showing grade of indicated and inferred mineral resource blocks



The copper discovery is expected to have impact on the economy of the Democratic Republic of Congo. The SAI has a role to play right from this early stage to ensure that the resource is well managed and that the country gets developmental benefits from the mineral resource.

Box 5.2 Case study: Current mineral deposits in Zambia

Zambia's mining industry is doing well and it is endowed with natural resources. If the global demand persists and the commodity prices remain buoyant then Zambia's mines could generate significant revenue for the government and the citizens. The mining industry would not just provide a huge tax boost to the national government's coffers, but it would also be pumping huge amounts into local communities. At last the promises of the government and companies would be fulfilled and people would start to see the benefits of mining as their living standards begin to improve.



Despite Zambia being ranked 7th globally in copper production, communities continue to suffer from abject poverty and miserable quality of life with little access to basic services and even less hope.⁷³

⁷³Open Society Initiative for Southern Africa (OSISA) 2013

5.2. Annex 2: Key regional and international initiatives in the EI sector

5.2.1. Natural Resource Governance Institute (NRGI)

The [Natural Resource Governance Institute](#) (NRGI) is a non-profit organisation established to help countries realise the benefits of their endowments of oil, gas and minerals. The NRGI offers technical advice, advocacy, applied research, policy analysis and capacity development. The NRGI works with innovative agents of change within government ministries, civil society, the media, legislatures, the private sector and international institutions to promote accountable and effective governance in EI. Priority countries for the NRGI include Colombia, DRC, Ghana, Guinea, Indonesia, Mexico, Mongolia, Myanmar, Nigeria, Tanzania and Tunisia. In addition, the NRGI has limited engagement in Azerbaijan, Bolivia, Kyrgyz Republic, Libya, Peru, Philippines, Uganda, Ukraine and Zambia.

Natural Resource Charter

The Natural Resource Charter is a set of principles offering policy options and practical advice for governments, societies and the international community on how to best manage natural resources for sustainable development. The Natural Resource Charter is not a precise prescription. Instead, it addresses the ingredients successful countries have used.

The charter focuses on the entire chain of decision-making starting from the discovery of the natural resource, the decision to extract, the awarding of contracts and licences, managing the revenue and developing sustainable policies for the development of the country. The charter consists of 12 precepts divided into three groups: domestic foundations for resource governance, the chain of economic decisions required to manage resources for prosperity, and the international foundations for resource governance. The first group emphasises establishing a strategy, guiding principles, rules and institutions pertaining to all the processes in the resource management, as well as the importance of accountability and transparency. The second group addresses the key decision areas for government in ensuring that value from resource wealth is translated into sustained prosperity for citizens. Lastly, the third group addresses the role of international actors, namely extractive companies and those responsible for international governance. The charter has also been translated into a Natural Resource Charter Benchmarking Framework, which is a tool for benchmarking a country's management of oil, gas and minerals against global best practices.

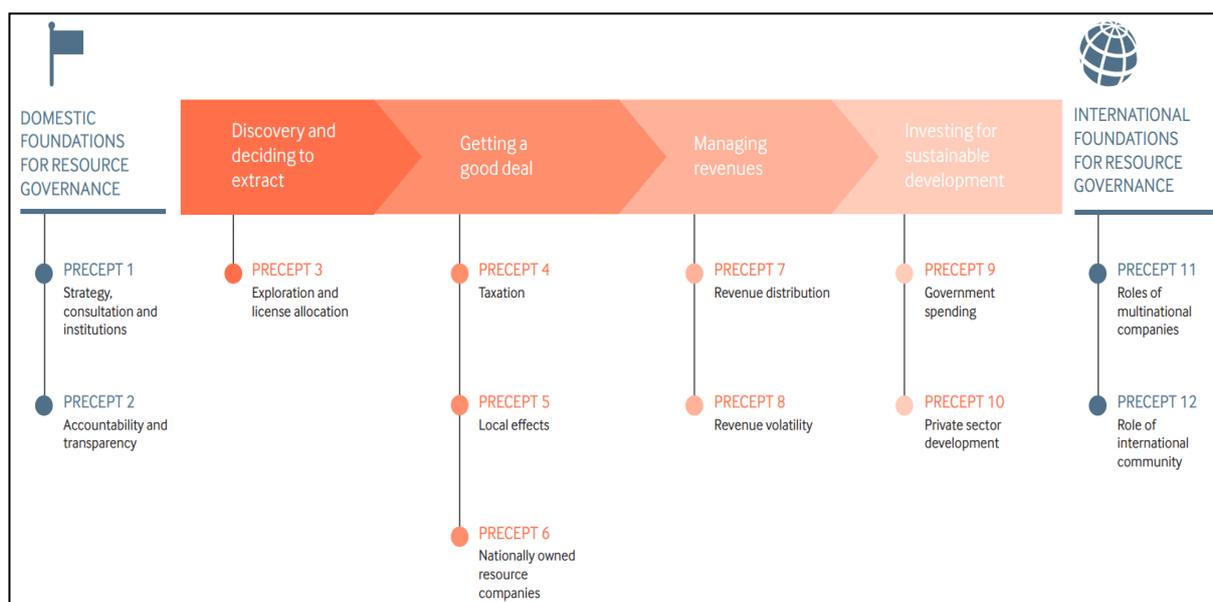


Figure 5.2: Natural Resource Charter

Resource Governance Index (RGI)

The [Resource Governance Index \(RGI\)](#), developed by the NRGi, measures the quality of governance in oil and gas mining sectors of 81 resource-producing countries. The index is currently the only international index dedicated to resource governance. The RGI can serve as a useful tool for evidence-based policy making by governments and parliaments as well as evidence-based policy advocacy by civil society.

The RGI is a composite score based on assessments across three components: value realisation, revenue management and enabling environment. *Value realisation* covers the governance of allocating extraction rights, exploration, production, environmental protection, revenue collection and state-owned enterprises. *Revenue management* deals with national budgeting, subnational resource revenue sharing and sovereign wealth funds. Lastly, the third component measures a country's *enabling environment*.

Findings on resource governance indices show that 66 of the 81 countries assessed, i.e. over 80% of the countries, exhibit weak, poor, or failing governance. Consequently, less than 20% of the countries achieved an overall rating of satisfactory or above.

Resources

The NRGi provides relevant resources related to the governance of EI. Their offerings include various publications, tools, training and courses. Some of these can be accessed through their website at <https://resourcegovernance.org/>. The NRGi has developed the following free online courses:

- [Natural Resource for Sustainable Development](#): The Fundamentals of Oil, Gas, and Mining Governance
- [Interactive course](#): Petronia

5.2.2. Working Group on the Audit of Extractive Industries (WGEI)

In the INTOSAI community, the [Working Group on the Audit of Extractive Industries](#) (WGEI) was established in 2013 to facilitate knowledge sharing and networking for SAIs related to audit of the EI sector in order to promote good governance and sustainable development in the extractive industries. The scope of the working group includes oil, gas and solid minerals. The WGEI is currently composed of 46 members and is chaired by SAI Uganda from 2014 to 2022.

Through the website, the WGEI provides tools and resources related to EI. These include audit reports on [oil, gas](#) and [mining, research papers, audit guidelines and manuals, newsletters](#) and [links](#) to other resources.

5.2.3. Extractive Industries Transparency Initiative

The Extractive Industries Transparency Initiative (EITI) is the global standard for promoting transparency, accountability and good governance in countries rich in oil, gas and mineral resources. The EITI Standard requires the disclosure of information along the extractive industry value chain, from how extraction rights are awarded, to how revenues make their way through the government, and how they benefit the public. The standard requires EI companies to publish what they pay to governments, and for governments to disclose what they receive which largely includes taxes, royalties and other statutory payments. The implementation of the EITI Standard takes place at the country level. As of March 2019, 52 countries are implementing the EITI standard, of which 24 are countries in Africa.⁷⁴

⁷⁴ [EITI in Africa 2018](#)

The initiative emerged to mitigate the outcomes of low per capita growth, slow progress on human development, and social and political instability common to resource-rich developing countries. The EITI expects that the improvement of financial transparency in these transactions will assist with the minimisation of corruption, and better accountability in resource economies. Transparency is expected to provide a significant improvement in accountability and governance. The quality of governance is a significant factor in determining whether natural resource wealth brings long-term sustainable benefit.

The EITI process

The EITI process aims at seeing results from the natural resources that transform to benefits of the people. The EITI process in a country is a government-led initiative that requires the government of each resource-rich country that wants to implement the EITI to publicly declare its intention.⁷⁵ The government is required to create an environment for civil society and the EI companies to fully, actively and effectively engage in the EITI process with active support from other stakeholders such as investors and international organisations. The government is required to commit to working with civil society and companies, and establish a multi-stakeholder group (MSG) to oversee the implementation of the EITI. The MSG in each implementing country acts as governing board (government, industry, civil society organisations) to systematically review, assess and report on what is being paid by companies and received by governments from EI operations. The key functions of the MSG include:

- Setting strategic direction of the initiative;
- Defining the reporting scope of the initiative in each country;
- Developing the national EITI work plan and conducting the reconciliation process;⁷⁶
- Reviewing the outcome and impact of EITI implementation on natural resource governance and publishing annual progress reports;
- Defining “materiality” by top companies, jurisdiction, type of payment, threshold and reporting government entity.

Below is an illustration depicting how the EITI works in three steps:

⁷⁵ The EITI Standard 2016 – Requirement 1.1a

⁷⁶ www.treasury.gov.pg

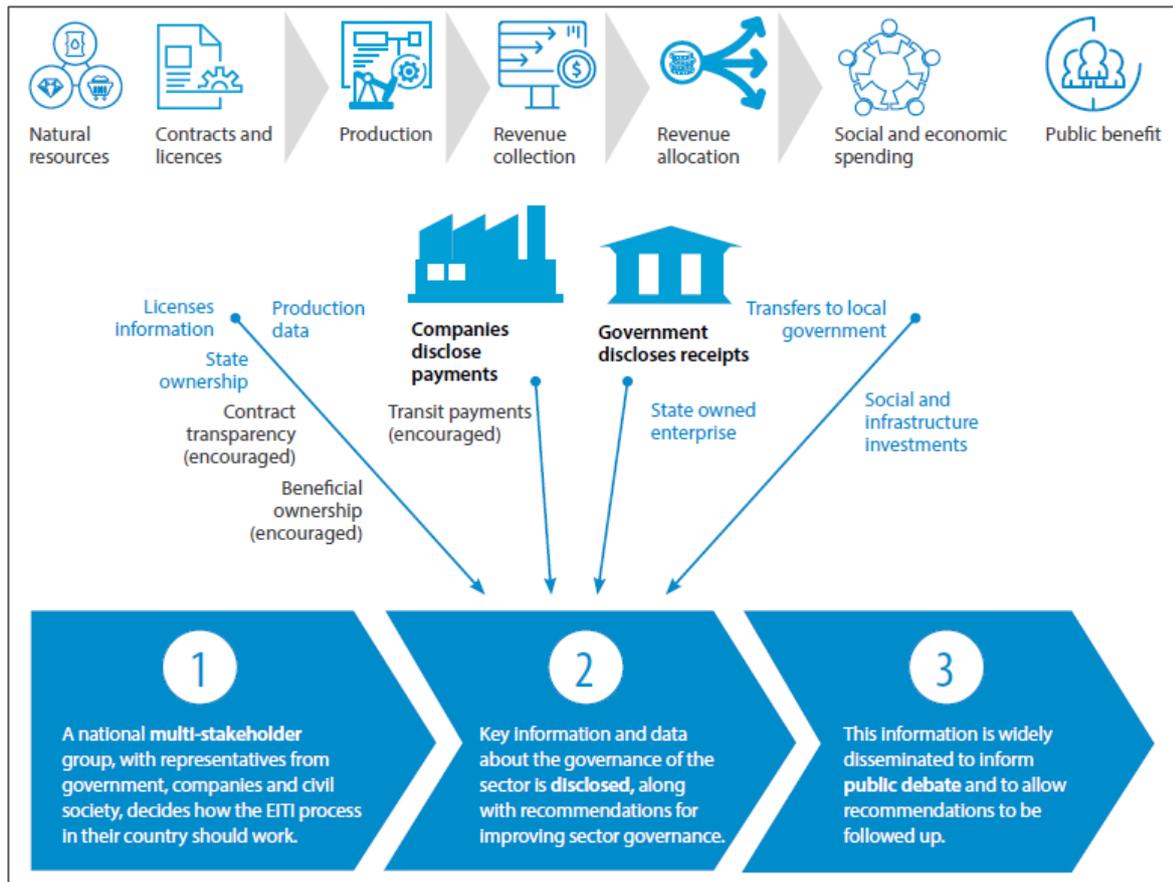


Figure 5.3

Source: [EITI Progress Report 2018](#)

Benefits of implementing the EITI

The EITI aims to minimise corruption and maximise accountability of oil, gas and mining companies at national and local levels. It provides a voluntary standard that promotes and supports improved governance in resource-rich countries through full publication and verification of company payments and government revenues resulting from oil, gas and mining operations. It is supported by a robust and flexible methodology to ensure the standard is maintained in all implementing countries. It is expected to result in improved management of resource revenue. Benefits for implementing countries include mitigation of political risk. The EITI improves the investment climate by providing confidence and clear signals to investors and international financial institutions. The EITI demonstrates commitment to reform, anti-corruption and good governance, leading to improvements in tax collection and international standing, and enhanced trust and stability.⁷⁷ In summary, the EITI:

- Provides more complete financial information on companies and countries;
- Informs country ratings and investments;
- Establishes forums for discussion and reforms;
- Improves the investor’s reputation.

⁷⁷ The EITI Standard 2016

Relevance of the EITI to the SAI⁷⁸

The EITI process and reporting provides the following benefits to the SAI's auditors:

- Easy access to information: The EITI process provides alternative ways of accessing documents from companies. Auditors do not normally carry out direct audit of the EI companies, their information can be sought through the national EITI secretariat.
- Identifies discrepancies and recommendations that can be used by the EI auditors for planning (risk assessment).
- Encourages companies to disclose their beneficial ownership which is very useful in assessing transfer pricing issues. A beneficial owner in respect of a company means the natural person(s) who directly or indirectly ultimately owns or controls the corporate entity. Ownership threshold(s), reporting obligations for politically exposed persons and publicly listed companies, including wholly-owned subsidiaries, should be disclosed.⁷⁹ This information may be very difficult to access through normal audit process.
- Enhances openness in reporting. Implementing countries are required to produce their first EITI Report within 18 months of being admitted as an EITI candidate. Thereafter, implementing countries are expected to produce EITI Reports on an annual basis.⁸⁰

SAIs' responsibilities in the EITI process

The EITI standard requires an assessment of whether the payments and revenues are subject to credible, independent audit, applying international auditing standards.⁸¹ In fulfilling this very important requirement, SAIs must ensure that the figures reported by government entities (national and sub-national) are free from fraud and error. In this regard, SAIs must audit all public sector entities responsible for receiving revenues from the EI based on international auditing standards (ISSAIs).

In many African EITI implementing countries, the multi-stakeholder steering groups (MSGs) through the national secretariat collect reporting (disclosure) templates from the government entities and companies. The disclosures of the government entities are sent to the SAIs for certification while the EI companies' disclosures are sent to their private auditors for certification. The MSG then appoints independent administrators who carry out the reconciliation of the government receipts and the companies' payments.⁸²

High-level considerations

- The SAI plays an important role in the verification of the payments from EI reported by government entities.
- The SAI may use the EITI reports to gather essential information on the country's extractive industry and to better understand the flow of EI revenues, thereby attaining a holistic overview of the EI sector.
- **The names of the government entities** (national and sub-national) selected by the MSG for reporting purposes. The MSG is responsible for selecting the Ministries Departments Agencies (MDAs) that should report for EITI purposes, whether they are central government entities or local government entities. The auditor should determine the MDAs that report for EITI purposes. This information is useful to the auditor especially in planning.
- **The scope/period of the EITI report:** Auditors should consider the timeliness of receipt of revenues from the EI companies by government entities. The report is done for a financial year

⁷⁸ The EITI Standards 2016

⁷⁹ EITI Standards 2016- Requirement (2.5)

⁸⁰ EITI Standards 2016- Requirement (4.8)

⁸¹ EITI Standards 2016- Requirement 4.9(a)

⁸² EITI Standards 2016- Requirement 4.9(b)

and on a cash basis. Date of application, date of award and duration of the licence are relevant factors to ensure that only receipts for that year are reconciled with the payments made by the companies in the same year.

- **The identified discrepancies and recommendations** in the EITI report can be used by SAI auditors in their audit planning and risk assessment.
- **The names of the EI companies selected by the MSG for reporting purpose.** It is important for the auditor to know the names of the EI companies selected by the MSG for reconciliation. This information will help the auditor to know which companies' payments were reconciled with government receipts.
- **The materiality level set for reporting purposes:** Materiality is a very important concept and tool in auditing. Therefore, the auditors should know the materiality level set for the reconciliation and compare with their materiality to help them plan the audit properly.
- **The individual licences and contracts** for which revenues were received from the EI companies. EI companies sometimes obtain and maintain more than one operational licences. The auditor should understand the different licences and contracts which were included in the reconciliation and the ones that were not included and the reasons for their exclusion.
- **The amount paid per licence or contract agreement.** The auditor should consider the amount paid by the EI companies to the government entities for each licence or contract held during the year under review. This information will help the auditor to get the complete knowledge of the revenues received from the EI sector.
- **The types of revenues received from each company** – verifying the EI revenues reported by the government. Various forms of revenues are received from the EI sector by government entities such as royalty, corporation tax, surface rent, export duty, signature bonus, training fee, application fee, and so on. It all depends on the resources available to the country and the extractive activity. It is important for the auditor to have full understanding of all the types of revenues received from the EI companies.
- **The amount of revenues received by each government entity**
The EITI reconciliation report disaggregates revenues reported by government entities. This information will help the auditor to have comprehensive knowledge about the entities in terms of extractive industries revenues collected for the year under review.
- **The type of commodity** for which the company is carrying out exploration, production, or other activities in the country. A country may have more than one extractive resource and some EI companies may engage in the exploration for or extraction of minerals, oil or gas. Therefore, the auditor should have full knowledge of the resources/commodities in respect of which the companies are carrying on EI activities.
- **The total production volumes and the value of production by commodity**, and, when relevant, by state/region. This could include sources of the production data and information on how the production volumes and values disclosed in the EITI report have been calculated.
- **The type of work the company is carrying out in the sector** (exploration, production, exporting, refinery, etc.). It is important for the auditor to know the type of work the companies are licensed to undertake in the sector: whether in the mining sector or in the oil and gas sector; whether it is reconnaissance, exploration, production, exporting, etc.
- **The size or scale of the extractive company.** In the mining sector it is also necessary for the auditor to know the size or scale of the extractive company: whether it is a large-scale company, a small-scale company or artisan miner. This information is important because various rates or fees are charged depending on the scale of the company.
- **The level of ownership by government and SOEs in the EI companies.** The EITI requires disclosures from the government and SOEs of their level of ownership in mining, oil and gas companies operating in the country's oil, gas and mining sector, including those held by SOE

subsidiaries and joint ventures, and any changes in the level of ownership during the reporting period.

Box 5.3 Case example: Sierra Leone on the implementation of the EITI process

The Sierra Leone Extractive Industries Transparency Initiative (SLEITI), like all other national EITI organisations, has a tripartite composition i.e. government representatives, civil society organisations and the EI companies' representatives that form the MSG. The SLEITI Secretariat is headed by the EITI National Coordinator and is supported by other administrative staff. Each government institution that has a role/responsibilities to perform in the extractive sector nominates two staff members (one substantive and an alternate) that represents the institution in the MSG. SAI Sierra Leone (also referred to as ASSL) is one of the institutions of government in the MSG because of its mandate to audit these government institutions.



The MSG also has sub-committees and one of them is the technical committee. It comprises MSG members with strong audit, accounting/finance and geological, civil society and EI company backgrounds. Its main responsibilities among others are: reviewing the annual work plan of the secretariat, setting materiality level (minimum amount and type of commodity, revenue stream, etc.) for reporting by government entities and companies, designing the reporting templates, selecting government entities and EI companies that should report, appointing/recruiting an independent reconciler/administrator, reviewing reconciliation reports, following up recommendations on the reconciliation reports, reviewing validation reports.

The ASSL's representative is a member of the technical committee. This committee relies heavily on the ASSL's representative to provide professional guidance/advice. The committee also carries out pre-reconciliation (also known as mock test or dry-run) of the data collected.

Apart from the general participation of ASSL at MSG, it is charged with the responsibility of carrying out certification of the data (reporting templates) submitted by the government entities as a requirement of the EITI Standard. ASSL carries out this responsibility based on its audits of these institutions. For those government institutions who are yet to be audited before the certification and reconciliation of the templates, ASSL normally requests additional evidence to support the information reported by the entities for the year under review.

In case a reporting template(s) is not certified by ASSL, the reason for not certifying that template(s) will be stated in its report to the secretariat. The secretariat will communicate this information to the government entity and the entity makes serious effort to provide additional evidence. If sufficient evidence is not provided, ASSL will not certify the reporting template(s). ASSL uses this report in subsequent audit planning and follow-up activities.

The independent administrator who prepares the SLEITI reconciliation report contacts the ASSL during the reconciliation process to confirm the procedures used to certify the reporting templates. In a similar vein, the validator of the SLEITI process requests ASSL to confirm its procedures used to certify the reporting templates submitted by the government entities and to explain its participation in the MSG. ASSL normally provides this confirmation in writing.

ASSL also seeks information from the SLEITI Secretariat through meetings or in writing, especially at the planning stage of an EI audit. For instance, when ASSL wanted to conduct an audit of surface rent paid by mining companies to government institutions and the audit of mining royalties, meetings and interviews were held with the SLEITI National Coordinator with the view of obtaining relevant information for planning purposes. ASSL also invites the SLEITI National Coordinator to participate in its in-house EI audit workshops, with the view of information sharing in the sector. Their presence in these workshops provided very useful information to the EI audit team.

ASSL and SLEITI are always willing to share information and cooperate with each other. This has supported both institutions' work in the EI sector. This collaboration and cooperation between ASSL and SLEITI and the role of ASSL as an MSG member of SLEITI serve as a strong pillar of the EITI implementation process in Sierra Leone. It enhanced the success of SLEITI to attain an EITI compliant status in 2013. In launching the SLEITI

reconciliation report in 2013, the former Head of State of Sierra Leone acknowledged the role of ASSL in supporting the EITI process in Sierra Leone.

5.3. Annex 3: Mapping the SDGs and Agenda 2063 to the extractive industries

The matrix⁸³ below illustrates how the 17 SDGs and Agenda 2063 issues can be addressed through extractive industries.

Table 5.3 Mapping SDGs and Agenda 20163

| SDG | Agenda 2063 | Extraction industry issue |
|--------------------------------|--|--|
| 1 – No poverty | 1- A high standard of living, quality of life and well-being for all citizens | Extractive industries should invest in local development by providing incomes, jobs and decent work focusing on a high level of economic growth resulting in better quality of life and well-being for all citizens. They can increase access to affordable energy, ensure sustainable natural resource management and reduce vulnerabilities and exposure to climate change events and natural disasters. |
| | 7- Environmentally sustainable and climate-resilient economies and communities | |
| 2 – Zero hunger | 1- A high standard of living, quality of life and well-being for all citizens | Extractive industries should collaborate with the local and neighbouring communities and farmers on land and freshwater use, fisheries, forests and biodiversity resources, focusing on sustainable use of natural resources. |
| | 3- Healthy and well-nourished citizens | Integrated planning and management of land resources for sustainable agricultural development and production is vital in alleviating hunger. |
| | 4- Transformed economies | Sharing EI infrastructure with local communities contributes to well-being of communities. |
| | 5- Modern agriculture for increased productivity and production | Extractive industries should provide local employment and invest in local development towards transforming economies. |
| | 7- Environmentally sustainable and climate-resilient economies and communities | Extractive industries should contribute their knowledge to improve energy efficiency and reduce their GHG emissions in their value chain. |
| | 8- United Africa (federal or confederate) | |
| 3 – Good health and well-being | 3- Healthy and well-nourished citizens | Extractive industries can conduct health impact assessments to strengthen capacity to manage health risks as well as occupational risks. |
| | 7- Environmentally sustainable and climate- | |

⁸³ The matrix draws from a project originated by the UNDP, IFC, IPIECA, and the Columbia Centre of Sustainable Investment (CCSI). The development of this mapping benefited significantly from the input and review of many AFROSAI-E stakeholders.

| SDG | Agenda 2063 | Extraction industry issue |
|-----------------------|---|--|
| | <p>resilient economies and communities</p> <p>17- Full gender equality in all spheres of life</p> | <p>It is also important for EI to protect workers and community members against infectious diseases and non-communicable diseases.</p> <p>They can also implement programmes on mental health and substance abuse. Designing programmes with benefits for employees is important. Extraction industries should also prevent and mitigate the health impacts of air emissions and effluent discharges as well as improving road safety. Full gender equality with all health and well-being issues.</p> |
| 4 – Quality education | <p>1- A high standard of living, quality of life and well-being for all citizens</p> <p>2- Well educated citizens and skills revolution underpinned by science. Technology and innovation</p> <p>16- African Cultural Renaissance is pre-eminent</p> <p>17- Full gender equality in all spheres of life</p> <p>18- Engaged and empowered youth and children</p> | <p>Extractive industries should establish a company strategy for local content to promote sustainable development by focusing on the entire value chain, especially regarding skills that are most needed and in short supply.</p> <p>Investment should be in workforce education, training and technical programmes by mapping existing capabilities and then assessing gaps, e.g. in-house training programmes focusing on technical as well as soft skills for locals. They can also offer scholarships/bursaries for studying towards formal qualifications.</p> <p>Promoting awareness and understanding of energy efficiency, environmental management, health/wellness and safety issues is critical, as empowering individuals with knowledge assists them to make better decisions.</p> <p>Supporting local schools (adopt a school) is important for creating awareness and educating the youth, especially regarding science, technology and innovation.</p> <p>Engaging and empowering youth, children and communities is essential.</p> |
| 5 – Gender equality | <p>3- Healthy and well-nourished citizens</p> <p>7- Environmentally sustainable and climate-resilient economies and communities</p> | <p>Extractive industries can help to reduce discrimination and promote women’s participation in industry opportunities by producing local content policies that are gender sensitive and do not create any inequalities.</p> <p>There should be support for full and effective participation by females at all levels of decision making as well as increased employment opportunities for females including their representation in management positions.</p> <p>Extractive industries can assist with addressing negative social impacts like crime, alcoholism, domestic violence, prostitution, trafficking and sexual exploitation and sexually transmitted diseases in local communities by partnering with NGOs and governments.</p> <p>Programmes to empower women in the science, technology, engineering, environmental management,</p> |

| SDG | Agenda 2063 | Extraction industry issue |
|---------------------------------|--|---|
| | | health and maths fields especially relevant to EI should be promoted. |
| 6 – Clean water and sanitation | 1- A high standard of living, quality of life and well-being for all citizens | Extractive industries must develop a company water strategy that accounts for the full impact of their operations on the local water resource and the possible impact of water scarcity on their operations as this could have severe implications for EI. |
| | 7- Environmentally sustainable and climate-resilient economies and communities | Ensure that their communities always have access to safe, clean and reliable water resources as well as good sanitation facilities/infrastructure. They should also conduct risk assessments on the availability of water as well as focusing on efficient water usage (reduce, re-use, recycle and replace) in their processes. |
| | 10- World-class infrastructure criss-crosses Africa | Effective waste-water management focusing on pollution prevention involves appropriate treatment, discharge and monitoring. It is important for EI to understand the water: energy relationship as they are heavily interdependent. Desalination plants are also heavily dependent on energy which is produced by EI. An integrated water management approach is required which includes government leaders as well as participation by various stakeholders to oversee usage and protect supply. Opportunities for sharing water infrastructure for water usage, recycling or treatment should be explored by EI, as this could reduce freshwater usage by improving water efficiency and reducing costs and competition for water resources. |
| 7 – Affordable and clean energy | 1- A high standard of living, quality of life and well-being for all citizens | Opportunities for improving access to energy services through shared infrastructure between the communities and EI should be considered and measures to improve energy efficiency in EI operation and production should be implemented. |
| | 7- Environmentally sustainable and climate-resilient economies and communities | Renewable energies and technologies like geothermal, solar, wind, hydropower and biofuels should be explored, as they support better health and environmental outcome than traditional fossil fuels. |
| | 10- World-class infrastructure criss-crosses Africa | Extractive industries should collaborate and leverage on an integrated multistakeholder approach to address energy shortages and challenges. |

| SDG | Agenda 2063 | Extraction industry issue |
|---|---|---|
| 8 – Decent work and economic growth | 1- A high standard of living, quality of life and well-being for all citizens | <p>Extractive industries must provide decent and safe work for their employees.</p> <p>Mineral ore resources/fossil fuels are finite resources and will eventually be depleted, it is therefore important for mining companies and the local economy to be able to diversify their value chains and identify other income avenues.</p> <p>A robust strategy for avoiding over-reliance on a company’s mining operations includes enabling entrepreneurs to identify innovative opportunities in the supply chain or for value-adding projects, developing the capacities of micro, small and medium enterprises and otherwise expanding the local EI sector.</p> <p>Extractive industries should be accountable and corruption free.</p> |
| | 2- Well educated citizens and skills revolution underpinned by science, technology and innovation | |
| | 12- Capable institutions and transformative leadership in place | |
| 9 – Industry, innovation and infrastructure | 1- A high standard of living, quality of life and well-being for all citizens | <p>Extractive industries should ensure that infrastructure and technology are upgraded to make them sustainable, focusing on efficiency and avoiding/reducing environmental and social impacts and related risks.</p> <p>Opportunities for sharing infrastructure like roads, power plants, water treatment facilities and ports and developing new infrastructure with host governments often result in cost savings and other benefits.</p> <p>Extractive industries play a vital role in enhancing technological capabilities and knowledge transfer, as the mineral, oil and gas industry requires a high level of technology and expertise. Capacity building to develop small and medium-sized enterprises is essential to integrate them into local procurement channels, which promotes inclusive industrialisation.</p> <p>Opportunities for expanding off-grid energy access in rural and isolated areas should be considered by EI working in these areas. Micro-grids, cleaner fuels such as butane and renewable energy technologies like solar and wind power are solutions that can provide reliable and affordable energy needed for development while addressing important societal challenges such as climate change and poverty.</p> |
| | 4- Transformed economies | |
| | 6- Blue Ocean economy for accelerated economic growth | |
| | 8- United Africa (federal or confederate) | |
| | 10- World-class infrastructure criss-crosses Africa | |
| | 19- Africa as a major partner in global affairs and peaceful co-existence | |
| 10 – Reduced inequalities | 1- A high standard of living, quality of life and well-being for all citizens | Many governments depend heavily on revenue from EI; this revenue can fund many long-term investment projects, which is important for economic growth and reduction in inequality. Transparency in the processes |

| SDG | Agenda 2063 | Extraction industry issue |
|---|--|--|
| | <p>8- United Africa (federal or confederate)</p> <p>12- Capable institutions and transformative leadership in place</p> <p>20- Africa takes full responsibility for financing her development</p> | <p>regarding payments and transfers is critical in ensuring the integrity of accounting information and holding governments as well as EI to account. Therefore, full and transparent tax payment is imperative.</p> |
| 11 – Sustainable cities and communities | <p>1- A high standard of living, quality of life and well-being for all citizens</p> <p>7- Environmentally sustainable and climate-resilient economies and communities</p> <p>10- World-class infrastructure criss-crosses Africa</p> <p>16- African Cultural Renaissance is pre-eminent</p> | <p>Mining activities can potentially affect the culture and traditions of local communities, particularly indigenous communities, by disrupting traditional practices or damaging areas of archaeological, historical, artistic or religious significance. Similarly, the industry can potentially impact natural heritage, which is equally important for people’s livelihoods and well-being. Policies should be developed to protect and safeguard the world’s cultural and natural heritage.</p> <p>Increased urban development can lead to urban encroachment on mining operations. To address the increased risks and costs that can be associated with mining operations located near urban centres, EI actors should be proactive in planning how to address such risks at the earliest stages of the development planning process.</p> <p>Traditionally mining projects in African locations attract job seekers and entrepreneurs from outside the area. This results in sudden population growth which can overrun existing communities and overwhelm local governments. Amenities such as health, clean water, education and traditional livelihoods are affected negatively. Inward migration can also bring a range of social issues including crime, breakdowns in established social networks and disproportionately negative impacts on women. Extractive industries actors should be proactive in planning how to support inclusive and sustainable urbanisation in communities near operations.</p> |
| 12 – Responsible consumption and production | <p>1- A high standard of living, quality of life and well-being for all citizens</p> <p>4- Transformed economies</p> <p>5- Modern agriculture for increased</p> | <p>Extractive industries produce more than just the mined product. For example, the oil and gas industries produce important products such as lubricants, asphalt, paraffin wax and raw materials for other sectors, such as agriculture, chemicals and pharmaceuticals, of which the consumption also has an impact on the natural environment. It is therefore important to understand the impact of production and consumption throughout the</p> |

| SDG | Agenda 2063 | Extraction industry issue |
|-----------------------|---|--|
| | <p>productivity and production</p> <p>7- Environmentally sustainable and climate-resilient economies and communities</p> <p>12- Capable institutions and transformative leadership in place</p> | <p>value chain of any product on the natural environment. Incorporating the concept of product stewardship which is an approach to understanding and managing the impacts of products throughout their lifecycle is imperative in the sustainable and responsible use of resources.</p> <p>Given their reliance on the inputs provided by suppliers and contractors, mining companies should typically ensure that, in addition to business requirements, the social, environmental, safety and quality standards of vendors throughout their supply chain align with those of the company. Coordinating supply chain logistics can shorten the supply chain, which improves environmental, social and economic sustainability.</p> |
| 13 – Climate action | <p>7- Environmentally sustainable and climate-resilient economies and communities</p> <p>12- Capable institutions and transformative leadership in place</p> | <p>The Paris Agreement or Paris Climate Agreement is an agreement within the United Nations Framework Convention on Climate Change (UNFCCC) dealing with the mitigation, adaptation and finance of GHG emissions. As per the aims of the Paris Agreement, it is important for governments to develop comprehensive national strategies to significantly reduce GHG emissions, as well as adaptation plans to deal with the impacts of climate. It is therefore critical for EI to decrease their GHG emissions as well as understanding the risks and implications of climate change for their businesses, e.g. the impacts on their infrastructure and operations across a range of different climate scenarios including emergency preparedness and disaster management.</p> <p>Addressing climate change will require collaboration and integration by all parts of society. Research is needed as well on current climate change issues and innovative low-GHG emission energy sources and emission reduction technologies will need to be advanced.</p> |
| 14 – Life below water | <p>4- Transformed economies</p> <p>6- Blue Ocean economy for accelerated economic growth</p> <p>7- Environmentally sustainable and climate-resilient economies and communities</p> | <p>It is important for EI to incorporate environmental management risks and mitigation plans into their overall operational and management plans across the value chain of their operations; this can include waste water treatment and discharge, air emissions, waste management, oil spill prevention during drilling and transportation, decommissioning and rehabilitation operations etc. Accident prevention, preparedness and response strategies and procedures are important to prevent pollution and degradation of aquatic systems.</p> <p>Mining companies should identify their key stakeholders and should always keep well-informed by frequently collaborating with their stakeholders as well as partnering</p> |

| SDG | Agenda 2063 | Extraction industry issue |
|---|--|--|
| | | with academic experts, local scientists and communities to develop technologies and conduct studies to improve protection, understanding and knowledge of the aquatic environment. |
| 15 – Life on land | 7- Environmentally sustainable and climate-resilient economies and communities | <p>Extractive companies should include environmental protection, biodiversity and ecosystem management strategies in their business management plans. They should be conversant with their operational value chain and the related cradle-to-grave impacts on the natural environment and society. Proper mitigation strategies to address pollution, degradation and rehabilitation should be implemented to ensure protection and sustainable management of natural resources. Proper safety and health procedures are imperative for a safe working environment with zero harm to all employees and the surrounding communities.</p> <p>Multistakeholder partnerships within EI provide opportunities to collaborate, share scientific knowledge and develop environmental management strategies for the protection of the natural environment.</p> |
| 16 – Peace, justice and strong institutions | 11- Democratic values, practices, universal principles of human rights, justice and the rule of law entrenched | <p>The UN Guiding Principles on Business and Human Rights recognise the responsibility of companies to respect human rights. It is important for EI to integrate human rights perspectives in their operational and strategic risks and impact assessments.</p> |
| | 12- Capable institutions and transformative leadership in place | <p>There is increasing emphasis on the importance of meaningful engagement and involvement with local communities which enables companies to better understand and communicate more effectively with local communities, enhancing respect and reducing conflict.</p> |
| | 13- Peace, security and stability are preserved | <p>Anti-corruption policies and compliance programmes should be integrated into core EI procedures as well as encouraging stakeholders and subcontractors to implement their own anti-corruption policies.</p> <p>State-owned enterprises often partner with independent mining companies and these partnerships can contribute to enhancing SOEs’ capabilities regarding operational experience and technology transfer as well as encouraging better management practices etc.</p> <p>Transparency regarding publication of payments made by companies to governments and revenues that governments receive from companies is important for promoting accountable management, good governance and ironing out corruption.</p> |

| SDG | Agenda 2063 | Extraction industry issue |
|---|---|---|
| 17 – Partnerships for the goals | 1- A high standard of living, quality of life and well-being for all citizens | Partnering with other stakeholders is important for ensuring more effective, higher-quality and sustainable outcomes. It is therefore important to EI to identify their key stakeholders and partner with them, e.g. |
| | 4- Transformed economies and job creation | Government can build capacity by working with EI and EI can work with the governments of developing economies to help them with capacity building, sustainable development strategies and tools to monitor and properly manage their revenues from the country’s resource wealth. These collaboration and partnership efforts can contribute to poverty reduction, stronger government institutions, greater transparency and improved rule of law. |
| | 12- Capable institutions and transformed leadership at all levels | |
| | 19- Africa as a major partner in global affairs and peaceful co-existence | |
| | 20- Africa takes full responsibility for financing her development | |
| Participating in dialogue, strengthening coordination between initiatives, incorporating SDGs as well as Agenda 2063 goals into policies and applying the indicators are some of the opportunities and approaches for companies to work with stakeholders at global, national, regional and local levels to achieve the SDGs as well as the goals of Agenda 2063. | | |

NB: It is important to note that this mapping is just a guideline for the auditor/project leader/reader and there could be other relevant issues and goals that are applicable to EI but may have been omitted in this mapping.

Annex 4: Useful links

AFROSAI-E <https://afrosai-e.org.za/>

Working Group of Extractive Industries <http://www.wgei.org>

African Tax Administration Forum (ATAF) <http://www.ataftax.org>

ATAF Model DTA - Transfer Pricing

[Toolkit for Transfer Pricing Risk Assessment in the African Mining Industry](#)

Bain & Company <http://www.bain.com/publications>

Contracts – Open oil <https://openoil.net>

Contract; oil, gas and mining <http://www.resourcecontracts.org>

EI Sourcebook <http://www.eisourcebook.org/>

Extractive Industries Transparency Initiative – EITI <https://www.eiti.org/>

International Monetary Fund <http://www.imf.org/external/index.htm>

IMF Primary Commodity Prices <http://www.imf.org/external/np/res/commod/index.aspx>

E-mail: publications@imf.org

Request a copy of “Administering Fiscal Regimes for Extractive Industries” A Handbook.
Author: Jack Calder. ISBN: 978-1-47557-517-0

Intergovernmental forum for mining of minerals <http://www.igfmining.org>

Natural Resource Governance Institute <http://www.resourcegovernance.org/>

OECD <http://www.oecd.org/>

<http://www.oecd.org/ctp/transfer-pricing/>

Rapaport Diamonds Price List <http://www.diamonds.net/Prices/RapaportPricelists.aspx>

World Bank – Value Chain document

http://siteresources.worldbank.org/INTOGMC/Resources/ei_for_development_3.pdf

Public energy data:

- www.eia.gov
- www.bp.com
- www.opec.org
- www.ieg.org

Mining data:

- www.ey.com/GL/en/Industries/Mining---Metals/Business-risks-in-mining-and-metals
- www.usgs.gov/
- www.bp.com

Some useful links for further reading on transfer pricing – tools and resources

- OECD Transfer Pricing Guidelines: https://read.oecd-ilibrary.org/taxation/oecd-transfer-pricing-guidelines-for-multinational-enterprises-and-tax-administrations-2017_tpg-2017-en#page1
- OECD on transfer pricing: <http://www.oecd.org/ctp/transfer-pricing/>

- Tax Justice Network on transfer pricing: <http://www.taxjustice.net/topics/corporate-tax/transfer-pricing/>
- PwC on international transfer pricing requirements and oil and gas review 2018.
<https://www.pwc.com/gx/en/services/tax/publications/international-transfer-pricing.html>
- <https://www.pwc.co.za/en/assets/pdf/africa-oil-and-gas-review-2018.pdf>
- EU Joint Transfer Pricing Forum:
http://ec.europa.eu/taxation_customs/taxation/company_tax/transfer_pricing/forum/index_en.htm
- 2017-18 EY World Transfer Pricing Reference Guide:
<http://www.ey.com/GL/en/Services/Tax/International-Tax/Transfer-Pricing-and-Tax-Effective-Supply-Chain-Management/Worldwide-Transfer-Pricing-Reference-Guide---Country-list>
- RoyaltyRange database on transfer pricing: <http://www.royaltyrange.com/home/royalty-rate-database/transfer-pricing?gclid=CN77hvyh3cYCFUTecgodDZAL4A>

Macroeconomic management in resource-rich countries:

<https://www.edx.org/course/macro-economic-management-in-resource-rich-countries-2>