GUIDELINE: AUDIT CONSIDERATIONS FOR EXTRACTIVE INDUSTRIES

NOVEMBER 2015

African Organisation of English-speaking Supreme Audit Institutions

PREFACE

The following guideline has been amended from the 2013 version. Sections deemed irrelevant after implementation in the region, such as detailed audit procedures, have been cut out. Some of the sections have been re-written in order to clarify that the principles applied to oil and gas are equally applicable to mining.

The growth of the petroleum sector in Africa is escalating. This sector presents a number of challenges for the public sector. The regulatory framework that is needed to ensure a sustainable development of the sector, a fair share of income and an equitable distribution of that income, is complex and challenging.

This guideline has been developed with the aim of enhancing the institutional capacity of SAIs in understanding how the petroleum sector can be organized in petroleum producing countries and to assist auditors in performing audits in a more efficient and effective manner.

It aims to provide:

- Consistent understanding of key concepts and audit approach for auditing extractive industries;
- a simple, step-by-step approach for auditing revenue received from extractive industries and;
- Further information on the key elements / focus areas, including the process of exploration, bidding, revenue collection and management. Basic processes, risks and potential key controls are provided together with audit programs.

Work on the guideline started with a development workshop held in June 2012. The following persons attended the workshop: David James Galiwango (Uganda), Mwila Munkanta (Zambia), Evans Hamaila, Stig-Allan Snahre, John Tore Iversen, Josephine Mukomba, Louis Heunis, Eszter Rapanos and Trygve Christiansen. The final draft was developed by Eszter Rapanos, a consultant, Trygve Christiansen and Ole Husebø Schøyen from the AFROSAI-E Secretariat.

Pretoria, ... November 2015

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List of Abbreviations

AFROSAI-E	African Organisation of English Speaking Supreme Audit Institutions
EITI	Extractive Industries Transparency Initiative
ISSAI	International Standards for Supreme Audit Institutions
RAM	Regularity Audit Manual
SAIs	Supreme Audit Institutions

1. Introduction

1.1 Purpose

This guideline is aimed at assisting SAIs tasked with auditing the public sector management of the extractive industries sector. It 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 actors.

Why are extractive industries important?

Extractive industries are important for government auditors because an endowment of natural resources can have a significant impact on a country, and requires a lot of regulation and a highly skilled bureaucracy to manage those regulations. Due to the combination of scarcity and high demand for the resources extracted, a great deal of economic rent is produced through these industries. Economic rent, or resource rent in the context of natural resources, is the excess profit, or supernormal profit that occurs, 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 the land or continental shelves of countries, they belong to the people of those countries.

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 in order to help mitigate those risks.

Africa is a natural resource rich continent and has a potential to extract vast amounts of economic rent, which can benefit its citizens. Yet, paradoxically it is one of the poorest continents in the world where many governments are dependent on foreign aid to provide basic services.

Natural resources are already an essential revenue source for many African countries. But there are many questions that natural resource rich countries should ask themselves. Are we comfortable that government receives all the revenue that they should from natural resources? Is there reliable information showing the natural resource reserves of our country? Does government adequately fulfill its role in managing and monitoring its resources? Supreme Audit Institutions (SAIs), as auditors of government, should look for answers on some of these important questions.

In terms of their mandate, SAIs are required to give assurance on the information reported, 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 the extractive industries. These responsibilities require an understanding of concepts related to extractive industries, country specific environments and international good practices.

The oil and gas industry is used as the main case study in this guideline. However, the key ideas presented in the context of oil and gas are equally applicable for the countries with mineral wealth extracted through mining, such as: ownership rights to the resource, economic rent, profit sharing between government and private companies, the importance of measuring production volume to determine profit sharing and the importance of developing the sector in a sustainable manner: taking care that environmental benefits are minimized and social benefits are maximized.

2. Background on petroleum and gas industry

'Barely a month goes by without a new oil discovery in Africa. Only five of the continent's 55 countries are neither producing nor exploring for oil. Most places are also extracting lots of lucrative minerals. A resource bonanza is in train across the continent, generating big government revenues and real benefits for Africans.'[1]

2.1 Current status

Africa is well endowed with oil and gas. New discoveries of petroleum and gas resources on the continent continue to emerge and present unique economic opportunities.

In 2009, Africa had proven petroleum reserves of 123 billion barrels, which represents around 10% of the world's reserves. Petroleum production has been on the rise with around 10 million barrels of petroleum produced daily. Five countries, two of them AFROSAI-E members, dominate Africa's upstream petroleum production accounting for 85% of the continent's petroleum production. These are, in order of decreasing output, Nigeria, Libya, Algeria, Egypt and Angola. Other petroleum producing countries are Gabon, Congo, Cameroon, Tunisia, Equatorial Guinea, the Democratic Republic of the Congo, and Cote d'Ivoire.[2]

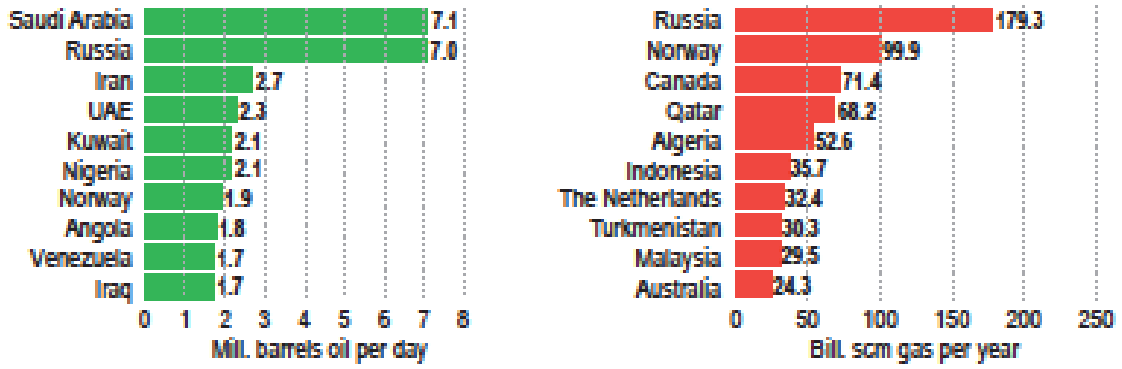
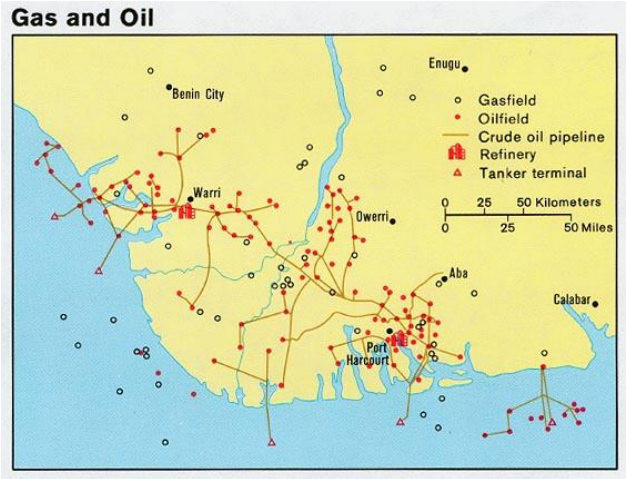


Figure 1: The largest petroleum exporters in 2010 and gas exporters in 2009. Angola and Nigeria, both AFROSAI-E members are among the top oil exporters (Source: KBC Market Services/Cedigaz)

[1] Source: The Economist 1st September 2012: Show Us the Money
[2] Source: Petroleum and gas in Africa 2009 (http://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/Full%20Document%20-%20Petroleum%20and%20Gas%20in%20Africa.pdf)

The Case of Nigeria



Nigeria has been exploiting petroleum resources for the last 50 years and is now the world's fourth largest petroleum exporter. Yet, its human and physical capital development is assessed to be 400 percent lower than it would have been if the petroleum revenues had flown into public funds, and if such funds had been utilized in the public interest to generate economic opportunities for all (African Development Report, 2007: 108–11).

An article in Financial Times[3] highlighted a challenge that the Nigerian treasury and petroleum companies lose 1 billion dollars a month due to petroleum theft. This has a major impact given that Nigeria depends on petroleum for more than 75 % of its hard currency earnings and more than 90% of state revenues. There is much uncertainty of how much crude petroleum is being pumped up from the wells, and how much benefits the population of Nigeria. The problem stems from the fact that production figures are measured only at the export well. This may provide an accurate picture of exports quantities, but it does not reflect losses incurred through leakage or theft over hundreds of kilometers of pipes. Companies hardly ever measure their petroleum at different points of the journey from wellhead to terminal and even when they do it is with varying degrees of accuracy. When production figures are requested, they are usually calculated back from the figures at the export well.

Is it a blessing or a curse?

Living with oil pipes in a rural area

Taking advantage of ruptured oil pipes, mostly caused by thieves leaving cracks in the pipe

Source for pictures: http://theparley.net/2012/05/07/shell-says-two-new-leaks-on-nigerian-pipeline/oil-pipes/

[3] Source: Financial Times 27.06.2012: "Nigeria loses $1bn a month to petroleum theft"

2.2 The future of petroleum and gas production

Exploration is taking place in a number of 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.

In the 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 between stakeholders. This process also calls for a new legislative framework, such as a Petroleum Act, the establishment of new agencies, acquiring new technology and competence. It is inevitable that contracts and deals will be entered with international petroleum and gas companies. The SAI can potentially play a critical role in ensuring that the extraction process follow internationally accepted best practice and that the resources are being used for the public good.

The case of Africa's petroleum resources along the Indian Ocean coast

According to the US Geological Survey, East Africa's coastal region holds 441.1 trillion cubic feet of natural gas[4]. Massive offshore gas discoveries have recently been reported in the waters outside Kenya, Tanzania and Mozambique. Extraction of these resources will transform these economies entirely. The countries are in a hurry to update petroleum legislation to reflect the new industries.

There are a number of risks associated with developing this industry. Expectations are high and the rewards may appear later than people think. The development of the petroleum and gas sector poses a number of new challenges relating to issues of transparency, corruption and social distribution. Corruption is also high on the agenda and there is a need to consider challenges.

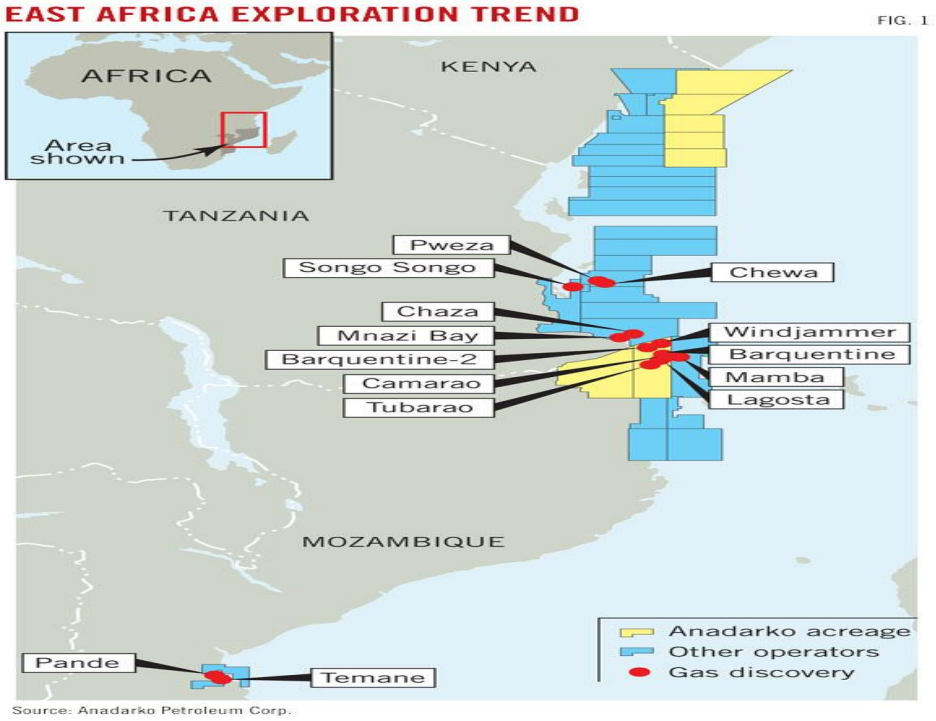


Figure 2: Map showing blocks for exploration in East Africa.

[4] Source: Capital News: Natural gas discoveries put East Africa on world energy map. June 19 2012.

3. Overview of Public Sector Audit of Oil and Gas

3.1 Introduction

The role of the SAI in auditing extractive industries may be different from country to country. The mandate of the SAI normally dictates the type of audits which should be performed and at the same time provides freedom for SAI management to decide on auditing specific areas and topics.

Annual regularity audits involve the financial statements of government entities (ministries, departments and agencies). Financial statements of these entities will include revenue collected from extractive industry disclosed either by using cash or accrual basis of accounting. Regularity auditors are required to attest to the credibility of disclosed financial information.

Performance audits can cover a number of themes in the extractive industry sector. Legislation that regulates oil and gas will usually place a number of demands on the civil service. Performance audits assess the effectiveness, efficiency and economy of the implementation of that regulatory environment. Possible themes are: Is the allocation of exploration and production licenses carried out in accordance with the rules and regulations? Are the environmental agencies carrying out their tasks in an effective manner? Is the revenue authority being efficient in its assessment of petroleum tax revenue?

The audits may fall into the following categories:

- **Regularity or financial audit** of extractive industry revenue collected by a government entity.
- **Audit of compliance** with legislation by government entity regarding contracts, monitoring operations, collecting and management of extractive industries data.
- **Performance audit** evaluating whether policy initiatives related to the sector are as effective, efficient and economical as the parliament intends when enacting them
- **Environmental audit** evaluating risks and controls regulating environmental matters relating to the extractive industry processes.
- **Transversal regularity audits** may cover specific topics or aspects affecting more than one government entity. Examples may be to look at the government's tendering processes for petroleum and gas industry. When a transversal theme is identified affecting more than one audit team, reference should be made to the Transversal Audit guideline of AFROSAI-E.

3.2 The Extractive Industries Value Chain

This guideline uses the Extractive industries value chain, as defined by the World Bank[5], as starting point for identifying the audit focus areas. The original five elements of the value chain are the following:

- Award of contracts and licenses
- Regulation and monitoring of operations
- Collection of taxes and royalties

[5] The World Bank: Extractive Industries Value Chain. A working paper by the Oil, Gas and Mining Policy Division and the Africa Poverty Reduction and Economic Management Department.

- Revenue management and allocation
- Implementation of sustainable development policies and projects

Based on the World Bank value-chain, this guideline has made further specifications to produce an AFROSAI-E relevant EI value chain. The audit focus areas identified are the following:

1. Setting the legal framework, including laws and regulations
2. Conducting seismic surveys and data management
3. Awarding of rights, contracts, licenses to companies to explore and extract petroleum resources
4. Monitoring of operations
5. Collecting taxes and royalties
6. Revenue management and allocation
7. Implementation of sustainable policies

SAIs may choose any one or more of the elements listed above as audit topics. For a country where petroleum has just been discovered it may only be relevant to assess the robustness and adequacy of the legal framework. If licensing rounds are to be established, the SAI should be aware of global good practices in this area and be able to identify risks and shortcomings early on in the process.

Note: Even when only auditing one of the elements auditors should still gain an overall knowledge of the country's legislative framework and related processes for the extractive industry.

This guideline contains additional considerations regarding auditing revenue collected by government from extractive industries. It is not aiming to replace the provisions included in the regularity audit methodology of AFROSAI-E. When performing regularity audits in line with International Standards of Supreme Audit Institutions (ISSAIs), auditors should complete the working papers in the regularity audit manual of AFROSAI-E and in addition consider the aspects in this guideline.

3.3 When should auditors use this guideline?

Auditors should use this guideline depending on the scope of the audit undertaken. Most SAIs audit the financial statements of government entities annually. When such financial statements include revenue and/or expenditure relating to extractive industries these amounts should be identified for audit. During the audit of financial statements the provisions and templates of the regularity audit manual should be followed. In addition, considerations highlighted in Chapter 4 of this guideline relating to extractive industry need to also be considered.

A SAI may decide to focus audit attention by identifying audit themes relating to extractive industries. The audit theme may cover one or more of the 7 elements listed above. To facilitate this type of approach chapter 4 provides a holistic overview of each of the 7 elements with explanations of typical issues, risks, controls and related audit programs. In addition, for theme audits the considerations included in the AFROSAI-E guideline for Transversal audits can also be referred to.

As an example, we can think of a country where substantial contracts have been awarded for extractive industries during the past year. In this case the SAI may decide to have a special audit covering the contracting process. Alternatively, a SAI may decide to evaluate the adequacy of the legal framework of government anticipating future extractive industry revenues. Such audits may be

done in a pro-active manner with unique opportunity for the SAI to add value through recommendations early in the process.

Auditors should keep in mind that the 7 elements described in chapter 4 form part of a single process. When tasked with auditing contracts awarded in the extractive industry, basic background information is gained by understanding the applicable legislative frameworks and information available (element 1-2 above). Elements 1-2 above provide for such background information and should always form part of extractive industries audits.

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

Figure 2. Audit Focus Areas

LEGAL FRAMEWORK

Three main types of legislative requirements:

- Constitution - Legislation - Regulations or instructions

SEISMIC SURVEYS AND DATAMANAGEMENT

Understanding the process:

- Existence of database - Ownership of survey data - Environmental considerations

AWARD OF CONTRACTS AND LICENSES

Three main types of contracts:

- Production sharing contracts - Concession agreements - Technical service agreements

MONITORING OF OPERATIONS

- Metering equipment
- Health, security and environment

COLLECTION OF TAXES AND ROYALTIES

Sources of revenue:

- Taxes - Royalties

Specific risks:

- Theft of petroleum
- Transfer pricing

REVENUE MANAGEMENT AND ALLOCATION

Sustainable use of revenue:

- Avoid "dutch disease" - Establishment of savings fund

IMPLEMENTATION OF SUSTAINABLE POLICIES

- Environmental concerns
- Local community involvement

4. Audit focus areas

4.1 Legal Framework

4.1.1 Introduction

Government is responsible for establishing a proper legal framework, through laws and acts, building on international best practice. Furthermore, government is responsible to put structures in place to ensure the proper implementation and monitoring of requirements.

Legislative requirements relating to extractive industries may be found on different levels:

1. The **Constitution** of many countries provides the legal basis for the ownership of hydrocarbon and mineral resources and their exploration, development, and production.
2. **Legislation** formulated at the parliamentary level normally sets out the principles of law (i.e. hydrocarbon and/or mining law). Legislation usually defines the legal and institutional framework, the role of state clearly separating commercial activities, licensing procedures and contractual terms; access to resources; comprehensive environmental protection requirements; and a framework for fiscal terms[6].
3. **Regulations** or **instructions** set out provisions that do not affect principles of law, or that may need 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 recognized good practices, including technical, environmental, accounting and auditing aspects.

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 3 levels described above. The legislative provisions on different levels of the framework should work together and not prescribe contradictory processes.

The following are examples of legal on the types of legislation / regulation which may form part of the legislative framework for extractive industries.

Constitution	May regulate power responsibilities between central government and regional and/or local government. The constitution may specify how revenue (from petroleum resources) should be distributed between different levels of government.
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 exploration and production of petroleum, duties of 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.
Petroleum Revenue Management	The petroleum revenue management provides rules and procedures for 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

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

Act	budget), establishment and management of reserve funds, transfers to affected local communities, investment policies etc. Normally the Central Bank will be granted a key role in the management of petroleum revenue.
Taxation act(s)	There will be a taxation act. Often a taxation act specifically aimed at the petroleum and extractive industries sector is established with special tax rates and regulations.
Production Sharing Contracts	Production Sharing Contracts (PSCs) are a vital part of the legal framework in many countries that use them. They can sometimes override other legislation covering taxation. The PSCs will often define criteria for recoverable costs.
Other relevant acts and regulations	Health, safety and environment act, Procurement act (regulating the bidding process), Finance and accountability act, Central Bank Act, Audit Act, Government strategic plan, annual state budget plan, Sales, Transportation and Marketing strategy etc.

4.1.2 Role Players

Parliament may be responsible for allowing exploration of petroleum and gas within an area, balancing different considerations such as environmental and revenue prospects. Parliament will also pass laws regulating this sector, scrutinize and act on the audit reports relating to extractive industries processes and revenues.

Government, through ministries, will operationalize the legal framework into regulations that governs the petroleum sector. It is also responsible to interact with the international companies and collects the revenues due.

There may also be other parts of government that provides oversight of the petroleum sector. Agencies dealing with health, environmental and safety issues, the ombudsman and the SAI may be identified having such responsibilities.

The government may also elect to have a national company in which government has majority share (i.e. National Petroleum and Gas Company). This company could either function as an operator and/or a licensee.

International companies are often crucial for ensuring that advanced technology and experience are brought into the projects. They manage out much of the reconnaissance, exploration, production, operating and dismantling of installations. Their motives are to maximize profits, by extracting as much of the resource rent as they are able to in the countries 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 such as donors and EITI often play an important role in promoting rule by law and existence of a robust legal framework.

4.1.3 Evaluation of Legislation

There should be specific legislation in place regulating the activities for each of the elements for the extractive industry. The auditor needs to obtain an overview of all existing legislation in order to identify any gaps, inconsistencies and areas where different interpretations can be applied. As it is explained above auditors should not expect to find all these elements covered in a single piece of

legislation. It may be necessary to identify and gain understanding of several acts and regulations or parts thereof, which may be time consuming.

Seismic Surveys and Data Management

The duties and responsibilities of actors should be clearly set. The legislation, typically the Petroleum Act, should define who has the rights to conduct seismic surveys and who has the right to own the data gathered from these surveys. Legislation might specify that all data should be handed over to government for inclusion in a national databank.

Award of Contracts and Licenses

The more detailed requirements included in the legislation the less decisions will have to be made through negotiating with the petroleum companies. The procurement process and the aspects which are left to be negotiated are ultimately policy decisions, documented in 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.

Monitoring of Operations

The legislative framework (i.e. the Petroleum Act) should provide for the regulatory bodies tasked to perform their monitoring of operations. The mandates of these entities may also provide useful information on what their tasks are. Regulations would normally deal with aspects of human resources, safety and environment.

Collection of Revenue

Taxes on the profits derived from the petroleum industry are often the most prominent revenue. The tax legislation should be updated to cater for the substantial profits that are made from the extraction of these resources, and special tax rates should apply. Also, the tax legislation should be written as clear as possible and not be subjected to extensive interpretation.

The auditor could assess to what extent the tax legislation is clear on how and which exploration costs can be deducted from the taxable revenue. There should also be specific legislation that deals with the risk of transfer pricing.

There should be specific reporting requirements in the legislation enabling tax officers to compare audited financial statements, tax returns and production figures.

Revenue Management

The auditor could assess to what extent the legislation ensures that revenues from petroleum and gas will be used for diversification of the economy and that there is a form of distribution formula in place. There should be clear procedures on how to invest the collected revenue and to ensure maximum dividends.

4.1.4 Legislation on Accounting

Government should set out the relevant accounting and information requirements relating to extractive industries. The Extractive Industries Transparency Initiative (EITI) sets a global standard for transparency in reporting revenues from petroleum, gas and mining. EITI rules require that all government and company reports are based on accounts audited in line with international standards. These rules set out for companies and for government are highlighted below.

Financial Reports of companies

Government should ensure that the financial reports of extractive industry companies are fully audited based on international standards. This means that government must pass legislation that forces companies to comply with required standards.

Government Reports

Government is required to ensure that the data which feeds into government reports is audited in line with international standards. At senior level in government there should ideally be a self-declaration saying that the government reports provide a faithful representation of the extractive industry revenues received. EITI also recommends that the SAI gives an opinion on the accuracy of the government's submissions to these reports.

4.2 Examples of Petroleum Legislation[7]

The purpose of presenting the examples of petroleum legislation below is to enable auditors to benchmark the legislation in their own countries with what AFROSAI-E considers to be good practice.

Petroleum Act (Covering Exploration, Development and Production)

Petroleum acts will differ from country to country based on local circumstances and specific format of laws. There are however sections that are fairly generic and its content should contain what is normally regarded as best practices.

- KEY INSTITUTIONS
  - There should be separate chapters establishing the different institutions, showing their functions and powers, their composition and their responsibilities. Normally such institutions would be
    - an oversight body dealing with overall policy issues and approval of agreements
    - a Ministry of Petroleum responsible for managing the petroleum sector
    - a Petroleum directorate with technically skilled staff
    - if applicable: a national petroleum corporation as shareholder and/or operator in the fields

- RECONNAISSANCE

  This section will explain the procedures for issuing reconnaissance licenses.
  - They should be given based on competitive, transparent and non-discriminatory reasons.
  - Environmental and social impact assessments should be conducted before issuing such licenses.
  - The Act should describe procedures for selling seismic and geological data, and how the profit should be split between the licensee and the government.

- AGREEMENTS FOR EXPLORING, DEVELOPING AND PRODUCING PETROLEUM
  - Such agreements should be made based on competitive, transparent and non-discriminatory

[7] The following acts have been used as inspiration: "Petroleum Act 2012 of South Sudan", "Uganda Petroleum (EDP) Act 2013" and "Petroleum Revenue Management Bill of South Sudan".

reasons. Specific qualification and selection criteria should be defined.

- For each phase there should be a specific procedure such as:
  - Environmental and social impact assessments
  - Approval of appraisal programme and declaration of commerciality after exploration
  - Approval of Plan for Development and Production
  - Issuing of Production Permit
  - Provisions for maximizing production volumes from the oil and gas deposits
  - Procedures for authorizing venting and flaring
  - Utilization agreements for several companies
  - Control of metering equipment

- CESSATION OF PETROLEUM ACTIVITIES
  - The petroleum companies shall develop a decommissioning plan and this should be linked to the environmental and social impact assessments carried out
  - The companies should be responsible for setting up a decommissioning fund and the funds should be sufficient.
  - There should be provisions on how abandonment and plugging of wells are carried out.

- HEALTH, SAFETY AND PROTECTION OF THE ENVIRONMENT
  - The Act should explain how Environmental and Social impact assessments should be carried out. Responsibilities for rehabilitation and liabilities for pollution damage must be clearly defined.

- PROCUREMENT OF GOODS AND SERVICES AND LOCAL CONTENT
  - Specific rules for procuring goods and services should be in place. The purpose of this section should be to favor local content and national providers. This will both ensure that national providers benefit from the investments and that costs are kept on a low level. These are costs that normally will be compensated by the government.

- DATA, INFORMATION RECORD-KEEPING AND PUBLIC ACCESS TO INFORMATION
  - The Act should make it clear that all data and information gathered from the different phases of the extraction process should be the property of the government. Samples from the soil, rocks, crude oil samples, seismic survey data etc. should be maintained by the government in a database.
  - Public access to information is key. Copies of contracts and licenses should be made public. Information about all the petroleum activities must be disclosed, and access should be free. It also means that all key sector production, revenue and expenditure data should be made available.

Petroleum Revenue Management Act

There are different ways of managing petroleum revenue. In Norway the fiscal rule states that the annual use of public revenue generated from oil production cannot exceed the expected rate of return on the sovereign wealth fund. The expected return is currently set at 4%. However, in countries such as South Sudan, approximately 98% of government revenue stems from petroleum revenue. This means that petroleum revenue to a large extent is used to finance government expenditures. The legal framework regulating usage of petroleum revenue should reflect these country specific circumstances.

Normally, one would tend to find the following sections of a Petroleum Revenue Management Act:

- PETROLEUM REVENUE ACCOUNT
  - According to best practice, all petroleum revenue should be paid into a separate account. But this is very much dependent on the taxation policy and the government's involvement in the petroleum sector.
  - The Act should state which entity should manage the Petroleum revenue account. Normally, it would be the Central Bank performing this function.

- TRANSFERS TO THE CONSOLIDATED FUND
  - There should certain rules and procedures for how petroleum revenue is used to fund the national budget. Ideally, transfers to the consolidated fund should not exceed the amount which is needed to fund government expenditures the coming year.
  - Transfers to the Consolidated Fund should only occur after having the necessary approval and signatures from certain officials.

- RESERVE FUNDS
  - Reserve funds are established with the purpose of saving funds for cushioning the economy against volatility and shortfall in petroleum revenue. Such funds are also designed for providing savings for the long-term and support the welfare of future generations.
  - The Act should specify the rules for transfer of funds to the reserve funds. The rule should be that funds are transferred to the reserve funds when the petroleum revenue account exceed what is needed to fund next year's national budget.
  - Ideally restrictions on withdrawals from the reserve funds should be designed, i.e. that no withdrawals can be made within the first three years.

- INVESTMENT PROCEDURES
  - The funds should be invested in a way that ensures both maximum interest return and maximum protection.

- TRANSPARENCY AND ACCOUNTABILITY
  - There should be free access to information and written declaration of confidentiality in cases where this is deemed relevant. It is however important to have annual disclosure and publication of payments made to government agencies, using petroleum revenue.
  - Provisions for internal audit and external audit must be in place

4.2.1 High-Level Audit Considerations

The SAI needs to do a thorough mapping of the legal framework to establish the following:

1) What are the legal requirements of the government's management of the petroleum sector? A mapping of the legal framework is a prerequisite for developing an audit program for compliance audit.

2) How is the role of the SAI spelled out in the legislation? The SAI may be given a direct role in i.e. verifying the recoverable costs, receiving declaration of assets of officials.

3) The legal framework constitutes the bulk of policy that is approved by Parliament. The implementation of those policies presents a lot of possibilities for Performance/Value for Money Audit. The SAI can review the framework and attempt to identify Performance audit themes, based on Parliament's intentions when improving the legal framework.

4.3 Seismic Surveys and Data Management

4.3.1 Introduction

Seismic surveys refer to the process of mapping the area that has potential petroleum resources. Key role players are ministries and agencies/directorates being responsible for seismic surveys prior to the licensing process.

Ideally, parliament or an appropriate legislative body must consider whether an area should be explored or not. There will always be a number of considerations, which may for example relate to the environment. In many cases petroleum is discovered in areas with rich biodiversity and fragile environment. In other cases, there might be communities and local industries affected by petroleum exploration. Ultimately, a decision to open up an area for exploration is a political decision which should be based on unbiased, neutral information to balance different interests. When a seismic survey is performed ideally an Environmental Impact Assessment (EIA) should also be done.

Government, through ministries and agencies/directorates should ensure that information from these surveys are stored and updated in a database. There should be controls 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 countries 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.

4.3.2 Environmental Impact Assessment

Environmental Impact Assessment (EIA) is an assessment of the possible positive or negative impact that a proposed project may have on the environment, together consisting of the environmental, social and economic aspects. The international standards on environmental management, the ISO 14000 series, prescribe how such assessments shall be carried out.

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 well. The auditor should ensure that:

- The EIAs have been developed according to the correct format and that all relevant risks have been considered;
- The EIAs are being constantly updated;
- The EIAs are being reported on regularly

Example: Data management in Norway[8]

All data gathered from seismic surveys in Norway feeds into a centralized database run by the Norwegian government. What is however unique with the Norwegian model is the responsibilities placed on the licensees by government. When companies are given a license 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 taxation rate and prediction of future revenue from petroleum and gas production.

4.3.3 Seismic and Geological Surveys - Onshore and Offshore

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 licenses 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 specialize in carrying out seismic survey. They do a large-scale mapping of the seabed and gather valuable data. By using advanced equipment they can cover thousands of square kilometers in a short time. But rigorous analysis of the data must be done before expensive drilling is initiated.

4.3.4 High-level Audit Considerations

The role of the Auditor is first and foremost to obtain an understanding of how government gathers information about the exploration area and how this information and data is kept and used. Further, the award of reconnaissance licenses 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 whether:

1) Whether an Environmental Impact Assessment (EIA) was conducted prior to the political approval or if one is planned. Who did the EIA? Were there quality assurance processes undertaken?

2) Is there any reason to doubt the reliability of the seismic study?

   - What is the competence of those performing the study?

3) Does government run a seismic data database? If yes, is it complete and is there proper data security provided for?

   - Information security is a risk that information may be disclosed to unauthorized persons with no proper access. Where security is low information may also be amended unlawfully.

[8] The (Norwegian) Petroleum Activities Act, § 10-4

- On the other hand certain information on exploration blocks should also be made public if an open bidding process is initiated.

4) The process of giving out reconnaissance licenses was fair and that the reconnaissance phase has a time limit (usually such licenses last 1 year).
5) The licenses 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.
6) Any selling 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.

4.4 Fiscal Systems, Contracts and Licenses

4.4.1 Introduction

There may be different practices in different countries in awarding contracts. Whilst best practice dictates that a competitive bidding process should be followed, governments often opt to enter into bi-lateral agreements. In this guideline the characteristics of a transparent, competitive and non-discretional bidding process for the award of exploration, development and production rights is discussed. Focus will be placed on a best practice scenario, highlighting the characteristics for an efficient and effective system, including:

- Transparent, competitive and non-discretionary bidding procedures and legal framework for the award of exploration, development and production rights;
- Well defined institutional responsibilities.

The bidding and licensing process for hydrocarbon exploration and production rights is normally managed by a specific ministry which is responsible for interacting with the petroleum and gas companies. The process can be run either for example to select:

- The lowest bidder
- The best qualified bidder
- The most experienced bidder

To score and select bidders such criteria needs 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 on the basis of the work program. In some others, many terms are negotiable. There is no model bidding system or strategy that governments globally can adopt.

But why is there a need for governments to contract 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 expertise of these companies to extract the resources buried beneath the earth.

There are definite ***advantages*** of 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 petroleum industry. Governments are reliant on the revenue 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 favorable contracts.

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

Types of fiscal systems

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 oil company.

In a concession or licensing system, the title to the resources passes to the oil companies when the oil is extracted, but 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 contract: 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 resource that is produced be shared or sold?
- In what order will the parties get paid?

It is important that auditors become familiar with these types of fiscal systems so that they understand the type of revenues 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.

Production Sharing Contracts

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 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 mining companies acquire an entitlement to a stipulated share of the metals/petroleum produced as a reward for the risk taken and services rendered. The state, however, remains the owner of the minerals/petroleum produced subject only to the contractor's entitlement to its share 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 and which monitors the operations.

PSCs are distinguished from other types of contracts in two ways. First, the company carries the entire exploration risk. If no petroleum is found the company receives no compensation. Second, 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 is deducted, the company is entitled to a share of production for cost recovery, usually limited to some share, e.g. 50%, of the gross revenue or net revenue (after royalties are subtracted). . The remainder of the production (profit) is then shared between government and the company at a stipulated share (e.g. 60 percent for the government and 40 percent for the company). The contractor then has to pay income tax (e.g. 30%) on its share of profit. The figure below shows how the production is shared each time a barrel of oil is sold. Cost recovery is set at 33.3% here, such as situation would only occur in a late stage when most of the costs have been recovered. Recoverable costs are normally reported by the companies during production, development and operation. After approval from government they are accumulated into a list which is reduced every time a sale is made.

Figure 3. Example of the Taxation of production sharing contracts

		$20/ton		
		↓		
Contractor				Government
		Royalty 10%	→	$2
		↓		
		$18		
		↓		
$6	←	**Cost Recovery 33.3% (Max.50%)** (assumed)		
		↓		
		$12		
		↓		
$4.80	←	**Profit split 40%/60%**	→	$7.20
↓				
−$1.44	→	**Tax 30%**	→	$1.44
$9.36		**Gross Revenue**		**$10.64**
$3.36 (9.36 - 6[9])		**Net Cash flow**		$10.64
24%		**Take**		76%

[9] Cost recovery is compensation for a previous outflow, therefore the net cash flow over the full cycle of the project is 0 for the company.

The degree of taxation is largely determined by the terms of the contract and therefore the formulas for calculating these shares can be found in the contract itself or are sometimes prescribed by law. PSCs are the most popular types of contracts used by governments.

Concession Agreements

Concession agreement is the oldest of international agreements and is sometimes referred to as a license 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 license.

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.

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 resource that is produced and the company gets paid in cash or commodity e.g. petroleum.

4.4.2 High-level Audit Considerations

The award of contracts and licenses 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:

1) The chosen licensee/contractor fulfills all the qualification criteria set in the legislation. It is of vital importance that the operator possesses the correct qualifications and the appropriate competence.

2) The content of the petroleum agreements are in accordance with the provisions in the legislation.

3) If required, the licensee/contractor(s) have set up a separate company in the country responsible for the operations.

4) The contractor, when ending the exploration phase and moving into development/production phase, has fulfilled all the obligations in the current commitment period and submitted a work program to the government on the obligations for the next commitment period.

5) The government takes action if the contractor does not comply with the time frames in the petroleum agreement.

6) The contractor reports to government within the stipulated time frame after discovery of oil and gas are made.

7) The appraisal programme has been developed in accordance with international best practices and standards.

8) The government has received a report of the activities in the appraisal period and a written declaration of commerciality.

9) The Contractor has developed EIA and SIA in accordance with the requirements and that these are approved by the government.

10) 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.

11) The production permit issued by the government is in line with the production plan developed by the contractor.

12) The government has done everything in its power to ensure that the contractor maximizes the production volume from the oil and gas deposits.

13) Authorization for flaring and venting has been granted by the government for the correct reasons

4.5 Monitoring of operations

4.5.1 Introduction

Effective monitoring practices involve clear definition of duties by 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 amongst other things should be considered. 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.

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.

When auditing the monitoring process audit evidence becomes very important. Auditors should get documented evidence regarding monitoring activities. Assumptions should not be made that documents were reviewed or a filed report was cross-checked to supporting documents. Auditors should identify how reviews were documented and look for notes by the reviewer, queries and corrections which may have been made.

What should be monitored?

Regulations may prescribe the monitoring of various aspects of operations and/or information which should be provided. To ensure regulatory compliance, it is essential to collect and verify data for example on the volumes produced, consumed, exported, and on the prices actually realized by the seller. Regular assessments help ensure that the realized prices of minerals and hydrocarbons sold

from each project properly reflect market conditions and quality differentials at the time of the transaction.

The SAI is one of government's monitoring functions, by auditing the financial 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.

4.5.2 High-level Audit Considerations

The role of the auditor would be to ensure that government agencies and supervisory bodies ensure that the laws and agreements regulating the exploration, development and production of oil and gas 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 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:

1) The appropriate authority conducts testing and examination of measuring equipment at regular intervals and in accordance with regulations

2) The Ministry on a regular basis approves the methods and equipment used and keeps itself updated on any changes in methods of measuring

3) The Ministry is monitoring the set-up of transportation system and checks whether a necessary license for such a system has been issued in accordance with the requirements laid down in the legislation.

4.6 Collection of Taxes and Royalties

4.6.1 Introduction

The ability of a government to efficiently collect taxes, royalties, duties, and other revenues depends on the choice of fiscal regime and fiscal instruments, and in part on the administrative and audit capacity of the relevant institutions.

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 petroleum company exists, the government should receive dividends and other forms of payment as a shareholder of the company. Government revenue may therefore consist of several revenue streams, which may be collected in cash or in kind. Transparency is improved and reconciliation of accounts is facilitated when all payments made by petroleum and gas companies (including any state-owned company) to the state and the proceeds of taxes collected in kind are traceable and directed to a treasury account, preferably one opened at the central bank.

To ensure completeness of revenue collected it is essential to collect and verify data on the volumes produced, consumed, and exported, and on the prices actually realized by the seller. Regular assessments help ensure that the realized prices of minerals and hydrocarbons sold from each project properly reflect market conditions and quality differentials at the time of the transaction.

Tax evasion in the form of transfer pricing and inflation of recoverable cost is very high on the global agenda. On 18 June 2013 the world leaders at the G8 summit in Northern Ireland released the following statements in their declaration:

1) Countries should change rules that let companies shift their profits across borders to avoid taxes, and multinationals should report to tax authorities what tax they pay where.
2) Companies should know who really owns them and tax collectors and law enforcers should be able to obtain this information easily
3) Developing countries should have the information and capacity to collect the taxes owed them – and other countries have a duty to help them.
4) Extractive companies should report payments to all governments - and governments should publish income from such companies.

4.6.2 Types of Revenue

The main types of revenue collected from extractive industries, taxes and royalties are explained below.

Taxes are calculated and assessed according to the relevant tax regulation, e.g. a Petroleum Profits Tax Act. It is a tax on profit and it is calculated by subtracting operating expenditures and allowances for specific capital outlays from the income. Rules and laws govern the items that qualify for allowances. Tax officials have to check that a company does not, for example, classify capital outlays as day-to-day costs, or inflate equipment costs to boost capital allowances. Tax officials have to check that a company does not, for example, classify capital outlays as day-to-day costs, or inflate equipment costs to boost capital allowances. In addition, the contract may provide for tax holidays for a specific period of time.

In the case of petroleum production, there are large sums of money involved, so taxpayers typically make payments using production estimates regularly (i.e. monthly). At the end of the year, these estimates will be compared to an accurate calculation of the tax liability for that year and this may result in an over- or under-payment requiring final reconciliation.

Royalties are normally assessed based on an *estimated* output of petroleum and gas, price, crude petroleum quality and sometimes depth at which a petroleum field lies. There are normally different rates for onshore fields and offshore field, with offshore fields that runs 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; and
- A royalty rate (calculated as a percentage of value).

In order 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 actually realized by the seller of petroleum and gas. Reliance may be placed on the metering systems of the companies, but the accuracy of these reading should be checked at a regular basis by the relevant government agency.

Auditing Expenditures

When auditing extractive industries much of the audit attention normally focuses on the revenue side. However, expenditures form vital part of operations and should not be overlooked due to various reasons.

Firstly, revenues received from petroleum and gas industries such as taxes, are calculated on profits made by companies. This means that the amount of revenue taxes are calculated after qualifying expenditure is deducted. To ensure that taxes are calculated on the correct amount of profit auditors also need to ensure that expenditure deducted have actually occurred in line with requirements and therefore valid.

Secondly, many African countries are on the brink of realizing revenue from petroleum and gas industries. Potentially for many years exploration activities will result in only expenditure being realized without revenue, which may be audited by the SAI, depending on their mandates.

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.

Expenditures are generally incurred in three categories: 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 is called the '**successful efforts'** method for example allows a company to capitalize 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 capitalized.

Exploration costs capitalized 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[10]. As per the ISSAI standards 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.

[10] Source: http://www.investopedia.com/articles/fundamental-analysis/08/petroleum-gas.asp#ixzz24HQuRRl6

4.6.3 Specific Audit Focus Areas

Transfer Pricing

What is transfer pricing?

Apart from royalties, companies are taxed on the profits they make. The higher their costs (all other things being equal), the smaller their reported profits, the less tax they have to pay to the government. There is a great incentive for petroleum companies and contractors (often in collusion with each other) to inflate their costs artificially.

This can be done in different ways. One example is to claim that equipment recorded in the accounts is more expensive than it really is: so that, say, a section of pipe imported from Scotland that really costs $10,000 is priced at $30,000 in the accounts reducing the gross profits by $20,000. This involves a practice known as transfer mispricing (if it is traded across borders inside a multinational) or trade mispricing (if it happens between two unrelated, but colluding, trading partners).

Another example is if we consider a multinational company operates in country A with low taxes and country B with high taxes. The subsidiary in country A could provide a loan to the subsidiary in country B charging inflated interest. This way more tax deductible costs are shifted to country B while reporting the generated income and profits in country A. This will result in the lowest possible overall tax rate on revenue for the multinational company. It would also mean that government in country B would receive less tax revenue from the operations than it should.

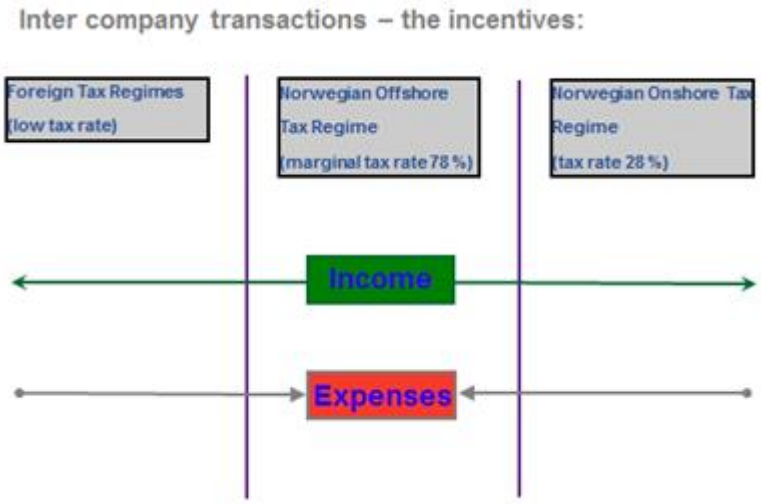
To avoid transfer pricing, which is a form of tax evasion, tax authorities will have to ensure that inter-company transactions are priced in accordance with market conditions. This regulation should be reflected in the petroleum contract entered with the petroleum and gas companies.

Auditors should acquire company data of all major foreign petroleum companies, and their payments made to the government. In USA the petroleum companies are now required to publish all payments to foreign governments above $ 100,000. According to the America's Securities and Exchange Commission[11], the primary goal of such transparency is to help empower citizens of the resource rich countries to hold their governments accountable for the wealth generated by those resources. More details on the reporting requirements of the companies and how it is disclosed can be found on the website of the Commission [12] .

[11] U.S.. Securities and Exchange Commission. Disclosure of Payments of Resource Extraction Issuers. 22 August 2012. http://www.sec.gov/rules/final/2012/34-67717.pdf
[12] http://www.sec.gov/rules/final/2012/34-67717.pdf

Figure 4: Example: Transfer pricing in Norway

As shown in Figure 4 below, the tax rate has a big influence on where multi-national companies report their expenses and their income. In Norway the tax rate on offshore activities is significantly higher than the onshore tax rate. As a result the companies might be tempted to report their expenses in relation to offshore activities since this will lead to deduction in taxes. Income will be reported for onshore activities or in foreign tax regimes, where the tax rates are much lower than in Norway.



Recoverable Costs

Companies exploring for and producing petroleum can normally reclaim their administrative costs. These costs can either be deducted from the petroleum revenue tax or it may be reimbursed by the government directly. This is a typical scenario when using production sharing agreements:

Company X has been granted an exploration license valid for six years. When exploring, the company will accumulate a lot of costs. These costs can be recovered from the petroleum revenue, when the company and government start to sell the oil. If the company fails to find oil and gas within the six years, it must pack its things and leave. The costs will not be reimbursed. But if petroleum is found and production commences, the company will be able to recover the costs from the revenue. It is however considered as best practice to not allow the companies to recover everything at once, thus ensuring that some revenue will flow into the petroleum revenue account of the government. If the company has accumulated 100 million USD in eligible recoverable costs, and should pay 100 million USD of taxes the first year of production, it cannot deduct everything. Best practice would be to let the company deduct 50 % and let the remaining 50 million USD be deducted the next year. Why? If every company is entitled to compensation from administrative costs the first year of production, the government will not receive any revenue. It is important that petroleum revenue immediately flows into the consolidated fund, allowing the government to meet the expectations of its citizens.

Who should validate the recoverable costs? In AFROSAI-E there are roughly two ways of doing this. In some countries it is the SAI who does the control. After the costs have occurred the documentation is sent to the SAI. The SAI will determine whether the costs are eligible and relevant. Normally, the SAI has a list of approved relevant costs. The SAI should remove costs that are not deemed relevant. Another option is to let the government itself validate the costs by doing pre-audit. A government agency, usually within the Ministry of Petroleum or the Revenue Authority, will be tasked with going through applications from the companies. Before the costs occur, the companies may need to get a pre-approval from the government. If the company plans to buy a drill, it must get the approval from

the government before the purchase is done. If such an application for approval is not submitted, the company will not be able to reclaim the cost from the government at a later stage.

A common challenge for those tasked with validating the recoverable costs is to know what are the eligible recoverable costs. The criteria for what constitutes recoverable costs are normally listed in the petroleum agreements and in the joint venture agreements[13]. These agreements are often not readily accessible - neither to government staff or to the auditors. Often it requires complex legal interpretations and common sense to validate the costs.

Example: Recoverable Costs in Uganda

It is a risk that the government does not put a cap on the recoverable expenditures. This may lead to that the companies inflate their costs, and that the government will lose a lot of revenue. Currently, it is estimated that Uganda owe the oil companies well more than 1 billion USD in recoverable costs[14]. In Uganda, the SAI has been given the role of government auditor, to confirm the correctness and applicability of the expenses related to exploration and production. It is important that these are assessed and determined to be applicable to the license in question and correctly valued.

Example: Deductible Costs in Norway

In Norway, which uses a concessionary system, the costs are deductible at a rate of 78 %, because oil revenue is taxed at corporate tax (27%) and a special tax for economic rent (51%). The tax authorities have a separate office, the Petroleum tax Office, to assess the oil companies tax returns. Which costs are deductible under the petroleum tax rules is a matter of constant dispute between the Norwegian government and the oil companies. Disputes are regularly settled in the courts.

Specific Risks

- The companies may include costs that surpass the budgeted costs for the financial year. It is a question whether costs that are not budgeted for should be included as recoverable costs.
- Agreements normally put a ban on hiring of foreign nationals by the oil and gas companies if the needed competence can be found within the country. It is a risk that the relevant authorities do not review the CVs of selected foreign experts and therefore are not able to ascertain whether their engagements are eligible.
- It is a risk that the activities of the country office of the oil and gas company do not relate to the fields in which the agreements regulate. The company may provide services to its sister company in another country, and both sister companies may try to recover these costs in their respective countries.

[13] Petroleum agreements are agreements between the licensee/contractor and the government. In many countries this equals production sharing agreements. Joint venture agreements are entered into in cases where there are a number of companies forming a consortium. These agreements regulate the sharing of profit within themselves.

[14] http://allafrica.com/stories/201302051176.html?page=2

The Importance of Metering

Theft or Loss

Measuring the output of petroleum only at the export terminal brings about substantial challenges. It is claimed that in Nigeria between 100 000 – 500 000 barrels of petroleum goes missing every day. To reach the export terminal the petroleum travels through various stages.

From out of the ground at the *wellhead*, the petroleum mixture (petroleum and dissolved gas, plus water) flows in a pipe, or *flow line*, to a *flow station* (and up to 20 wells will typically flow into a flow station). Here, the components of the mixture are roughly separated and the flow rate in flow lines is also sampled, on a rotating basis, in a *test separator*.

From the flow station the petroleum flows through larger *trunk lines* (via *manifolds* which collect several trunk lines together) to the *export terminal*, where more separation, especially of water, takes place. Petroleum thieves may tap into the lines at any point. Therefore it is crucial to know what flows through each stage which would enable reconciliations and quantifying losses more accurately.

The petroleum mixture needs to be measured at each of the following steps:

- Field Production Facility - located at the oil field
- Central Production Facility - located where pipelines from the field joins the main pipeline
- Production Measurement Point - this is usually located at the refinery or crude export point??

Ensuring Revenue Measurement

Correct measurement at several points is also important to monitoring loss of production through leaks that can harm the environment and to ensure correct calculation of revenues for determining royalties, production sharing, taxes and any other fees related to production volumes.

Environmental Considerations

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.

4.6.4 High-level Audit Considerations

The SAI needs to do a thorough mapping of the petroleum taxation legislation. In some countries there is a separate petroleum taxation act, but it may be more common to have it separately mentioned in the income tax act of the country. The SAI should assess whether:

1) The tax is calculated based on the rate specified in the taxation act.

2) The deduction of taxes for a specific year of income, only relate to a specific contract area[15], and that the costs have incurred in the same year as the income.

3) If applicable, the contractor may be allowed to deduct the royalties paid, based on certain conditions.

4) Deductions of funds going to a decommissioning fund reserve are relevant.

5) The recoverable costs are in line with the eligible deductible expenditures defined in the taxation act or Production Sharing Contract.

6) The value of petroleum, of which the tax value is derived, is calculated and measured in accordance with the regulations prescribed in the country.

7) Tax returns are submitted to the tax authorities within the stipulated time frame and that it contains relevant petroleum revenues.

8) All payments are made in the correct currency (as specified in the taxation act).

4.7 Revenue Distribution

4.7.1 Introduction

The extraction of oil and gas has a potential of generating massive revenues. Extraction of resources such as oil and gas is no guarantee for ensuring prosperity, equal distribution of wealth, reduction of poverty and long-term fiscal sustainability. On the contrary, oil and gas revenue can deepen existing corrupt practices and illegitimate power structures. It is therefore vital that the revenue generated is being used in a way that benefits the country as a whole.

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

4.7.2 Avoid the Dutch Disease

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) public expenditure smoothing in light of revenue volatility and (2) asset accumulation in light of 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

[15] 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, companies can deduct *all* their costs from all their contract areas combined.

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

The Dutch disease is a reminder that revenue collected from petroleum resources not only is a blessing, but also a course, 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 resulting in the Netherlands having a much stronger currency than other nations. The Dutch government also increased its spending, leading, which increased inflationary pressure on the domestic economy. The manufacturing industry suffered greatly from this by being less competitive.

In Nigeria the government has put in measures to combat the risk of Dutch disease by trying to diversify the economy. Currently Nigeria has a narrow revenue base by relying a lot on its petroleum resources.

Government should utilize petroleum and gas resources to achieve national plans which enable economic diversification and sustainable development. Petroleum and gas projects must be measured in relation to environmental and social impacts, socio-economic benefits and long-term sustainability. There should be ongoing coordination between government, regional and local authorities and petroleum and gas companies to design and implement sustainable projects.

Oil revenues are very volatile, mainly because the international price of oil is volatile. Fluctuations in the volume of domestic production can also contribute to the volatility of revenues. This should be taken into account when coming up with strategies for oil revenue management and allocation.

4.7.3 Oil and Mineral Savings Funds

With worldwide economic price booms the level of government revenue and accumulation of "windfall profits" has reached proportions unseen in the past. For countries with large expected revenues Oil and Mineral Savings 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 a number of 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; and
- Depending on the magnitude of the accumulation, to insure against extraordinary events (for example, natural disasters).

Countries expecting small revenue usually aim not for a permanent savings fund, but rather for a temporary but a fairly constant expenditure level for a number of years to kick-start their development. Countries with large revenues often start by eliminating high interest debt before implementing policies to invest surplus funds. It can also happen that the oil and gas boom generates an increase in public debt. Governments may take a too optimistic view of future revenues and incur

substantial expenditure commitments. A fall in oil prices would translate to lower than expected prices which may prove insufficient to service the debt.

The 2004 budget in Nigeria was based on a $25 a barrel oil price (when the prices were over $40). Any surplus above that was saved in the Excess Crude Account (ECA) – and this was announced. External reserves grew by an annual average rate of about 230%, from US$7.68 billion in 2004 to US$43 billion at the end of 2006.[16]

The reports of the SAI in this area could alert the government of 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 a country's development strategy?
- Are there policy measures to address the Dutch disease?
- Is there a credible mechanism to deal with excess revenue in a sustainable manner, such as that for setting it aside in a transparent savings and stabilization fund?

The Santiago Principles[17] represent another important set of internationally of accepted standards for the establishment and management of sovereign wealth funds. There are in all 24 principles covering i.e. legal framework, governance framework, audit (relevant for SAIs).

4.7.4 High-level Audit Considerations

In many cases a separate petroleum revenue management act is developed. The act would, as mentioned in Chapter 4.1.5, establish an account for petroleum revenue, outline rules for how petroleum revenue should be transferred to the consolidated fund, how funds should be set aside into reserve funds and how transfers to communities in oil and gas producing areas should be designed. To provide assurance that the rules and regulations for managing petroleum revenue are being adhered to, the auditor should assess whether:

1) Petroleum revenue is being paid on time to the designated account in the Central bank.

2) There is a management agreement between the Ministry of Finance and the Central bank which also covers investment policies.

3) The cap set on the amount of petroleum revenue to be transferred to annual budget is adhered to. Normally, the transfer of petroleum revenue should not exceed what is needed to fund next year's national budget.

4) Transfers from the Central bank (or the petroleum revenue account holder) are processed only with the appropriate signatures.

5) Any reserve funds established are managed in a proper way and that they are used for the intended purpose. Withdrawals should only be made for the correct reasons.

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[16] Source: Nigeria's Extractive Industries Transparency Initiative, November 2009:22

[17] Source: Generally Accepted Principles and Practices (GAPP) - *Santiago Principles*. http://www.iwg-swf.org/pubs/gapplist.htm

6) Transfers are made to the local communities defined in the legislation as eligible recipients.

4.8 Implementation of Sustainable Policies

4.8.1 Introduction

Sustainability can be related to the environment and the local communities affected by the petroleum extraction activities. Because the extraction of petroleum resources leaves lasting scars on the environment and may affect the local communities negatively, it is important to implement policies that reduce the negative effects to a minimum. The extraction of petroleum resources should also be seen as an opportunity to do good things, i.e. establish national parks/nature reserves for vulnerable areas, improve local infrastructure, empower local communities, create potential for local employment.

Sustainability also relates to the nonrenewable and volatile nature of petroleum revenue. It is important to diversify the economy and to curb the government expenditures.

Environmental Risks Pertaining to Mining

(also applicable to oil and gas)

Without underestimating the economic importance of the extractive industries we also need to note the serious environmental risks associated with it. These environmental effects start with exploration, extend through the extraction and processing of minerals and can also continue after the mine closes. The nature and extent of effects can vary throughout the stages of project implementation. Both large and small-scale mining operations have an impact on the environment. Mineral resource activities affect environmental media – land, air, water, and associated flora and fauna – as well as the human environment – individual health and safety, local community lifestyles, cultural survival, social order and economic well-being.

Environmental issues can include erosion, formation of sinkholes, loss of biodiversity, and contamination of soil, groundwater and surface water by chemicals from mining processes. In some cases, additional forest logging is done in the vicinity of mines to increase the available room for the storage of the created debris and soil. Contamination resulting from leakage of chemicals can also affect the health of the local population if not properly controlled.

Extreme examples of pollution from mining activities include coal fires, which can last for years or even decades, producing massive amounts of environmental damage. Environmental hazards and impacts also threaten indigenous cultures and native community land use, and socio-economic and cultural practices in countries with resource-based economies. These disruptions include permanent loss of natural resources, preemption of alternative land uses (for agriculture, forestry, hunting or leisure), ecosystem degradation and loss, destruction of key flora and fauna, displacement of populations, settlement influxes, crime and diversion of individuals and communities from traditional practices to boom-bust employment and small-scale or artisanal mining dependence. Although the majority of the impacts of mining are said to be “localized”, mining can cause national, trans-boundary and global environmental problems.

Processes implemented by government to minimize the risks

Mining companies in most countries are required to follow stringent environmental and rehabilitation codes in order to minimize environmental impact and avoid impacts on human health. These codes and regulations all require the common steps of Environmental impact assessment and development of Environmental management plans, Mine closure planning (which must be done before the start of mining operations), and Environmental monitoring during operation and after closure. However, in some areas, particularly in the developing world, regulation may not be well enforced by governments. Certification of mines with good practices occurs through the International Organization for Standardization (ISO) such as ISO 9000 and ISO 14001, which certifies an 'auditable environmental management system'; this certification involves short inspections, although it has been accused of lacking rigor and reports are voluntary and unverified. Miscellaneous other certification programs exist for various projects, typically through nonprofit groups.

4.8.2 Environmental Management

Every petroleum activity should be preceded by an Environmental Impact Assessment. The relevant government authority is normally responsible for carrying out a Strategic Environmental Impact Assessment prior to opening of new areas for exploration. This assessment will tell whether it is wise to carry out petroleum activities in the possible exploration areas.

If the Strategic Environmental Impact Assessment recommends an exploration, the government should coordinate an Environmental Impact Assessment (EIA) which shall be initiated and undertaken by the licensee or contractor. 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 doing the EIA, the licensee/contractor should also conduct a comprehensive environmental baseline study. This will assist in comparing the post-petroleum 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 petroleum 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 taken into account.

Example: Legal Requirements for Decommissioning in South Sudan

In 2012 a Petroleum Act was approved for the management of the petroleum sector in South Sudan. The Act relies on international best practice on how to ensure transparency, oversight and accountability for the petroleum activities in South Sudan, including the decommissioning phase:

Decommissioning Plan

A licensee/contractor who owns or operates a petroleum facility shall submit a decommissioning plan for the facilities, including wells, to the Ministry *before* the applicable licence or petroleum agreement expires. The plan must contain a detailed proposal for at least one of the following alternatives:

- Further use of the facilities for petroleum activities

- Shutdown of petroleum activities and continued use for other activities

- Shutdown and removal of facilities

The plan must also contain information on costs and finances, management system, cessation alternatives and EIA and SIA for the different assessments which need to be approved. Importantly, the plan must contain a proposal for restoration of lands and waste management.

The decommissioning plan must be submitted at least two years prior to the expiry date of the petroleum agreement/license. If the facility is expected to cease before the expiry date, the Ministry must be notified immediately and a decommissioning plan must be prepared and submitted as soon as possible.

The Ministry shall give notice of the decommissioning plan in the Gazette and by other appropriate means inform interested persons. The Ministry shall allow a period of time of not less than 90 days from the date of publication to for them to present their views.

After getting the views from the interested persons, a cessation decision will be made by the Ministry, and a time limit will be set for the implementation of the decision. Before adapting the decisions the Ministry shall be in dialogue with other relevant Ministries, institutions and interested persons. The Ministry shall consider *all interests involved* including those mentioned in Section 40 (3).

The contractor/licensee shall ensure the implementation of the cessation decision and shall submit a report to the Ministry on the work carried out. The cessation decision and the obligations imposed on the contractor/licensee shall survive the expiry of the petroleum agreement/license.

Decommissioning Fund

The licensee and the contractor shall immediately after the approval of the decommissioning plan establish a **decommissioning fund**. The fund shall be sufficient to cover the full costs of decommissioning.

Abandonment and Plugging of Wells[18]

The contractor shall submit to the Ministry immediate notice of any decision to abandon a well. Such abandonment shall only be carried out with the *prior consent from the Ministry*. The contractor shall conduct surveys of plugged and abandoned wells as prescribed in the regulations.

The contractor is responsible for restoring the affected area and removing the causes of damage or danger to the environment and the neighboring communities.

If a decommissioning plan is not submitted or a cessation decision is not implemented within the stipulated time limit the Minister may take the necessary remedial measures. This should happen at the expense and risk of the licensee or contractor. Funds from the decommissioning fund can be used by the Ministry for this purpose.

[18] Section 42

4.8.3 High-level Audit Considerations

The key risk is related to decommissioning. The oil and gas companies may have an interest in postponing the decommissioning phase, and make sure that government receives as much liability as possible. Many times, after wells and mines are abandoned, the companies have not done a proper job. The extraction sights still represent a threat to the environment and long-lasting scars are the legacy of the operations. It is the government's responsibility to ensure that this does not happen. To ensure that government performs its duties, the auditor should assess whether:

1) The relevant government agency receives and reviews a decommissioning plan *prior* to the expiration date for the petroleum agreement/license

2) The cessation decision survives the petroleum agreement/license.

3) That the licensee/contractor has set up a decommissioning fund and that it is sufficient to cover the projected costs of decommissioning.

4) The relevant government agency has a system in place to ensure that wells are surveyed by the contractor.

5) Government takes responsibility if decommissioning is not successfully planned and subject the licensee or contractor to strict liability

4.9 Fraud risks and audit considerations

Two main factors are often blamed for the scarcity of tax revenues from the extractive industries. First of all, unfavorable contracts and license agreements tend to ensure that the larger portion of profit flows to multinational companies instead of generating revenue for the Government. Secondly, there is a high level of perceived risk of corruption and theft associated with the sector bringing a focus for international good governance and anti-corruption initiatives.

Fraudulent or corrupt practices may relate to:

- Unfair allocation of areas or block for exploration.
- Lack of transparent, competitive and non-discretional 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 favored over others can go unnoticed and unpunished.
- Transfer pricing, undertaking transactions with related parties at prices other than arms' length.

Given the significant revenue that is generated from the petroleum 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 framework and the lack of well-defined institutional responsibilities may present opportunities for corruption or fraud to occur under the radar for long periods of time. 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 4: Fraud red flags in the petroleum and gas industry

CONSIDERATIONS / ELEMENTS	RED FLAGS INDICATING FRAUD AND CORRUPTION
Legal framework	Outdated legal framework 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 is not apparent that any law has been breached.
Seismic surveys and data management	No proper use of databank 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 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. Companies may also be reluctant to share their seismic data to 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.
Contract Management	Complex and unclear bidding criteria This makes is difficult to bid with accuracy and to know how the criteria will be applied in choosing between candidates. This gives clear way award contract to parties willing to pay bribes in order to be accepted. If the criteria is spelled out in an objective manner, and their weighting is clear, there is more accountability making it more difficult to choose unfit companies. When companies without ability to meet the criteria are given the license, they may opt to sell the rights to another company who can perform the contract. Proceeds from selling the license than shared with government official(s) that granted the license.
	No pre-qualification round Without pre-qualification rounds government can get overwhelmed by numerous applications by companies with varying degree 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.
	Information on exploration blocks not disseminated There is unequal access to information in 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.

Monitoring of exploration and production	<u>No reliable data on production figures</u> Often 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 actually 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.
	<u>Health, Environment and Safety</u> Companies may offer bribes to monitoring and controlling agencies and receive leniency regarding the application of regulatory requirements. Companies might be given the permission to operate petroleum rigs that do not comply with basic safety regulations, and which have negative impact on the environment.
Revenue collection	<u>Discrepancy between tax return and what was received by Central Bank</u> 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 way or overlooked? This issue brings the integrity of tax officials in question.
	<u>No proper financial system</u> The revenue authorities do not operate with double entry bookkeeping or maintain a cashbook or a 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. Auditors should also be aware that the systems are often blamed for discrepancies where simple checks would result in full reconciliations.
	<u>Limited oversight</u> 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 on the outside of government information and management systems. Deals between top government officials and the petroleum and gas companies can be entered which ensure that some of the financial flows end up in private hands.
Revenue Management	<u>Sale of natural resources is not transparent</u> Sales and marketing information on natural resources is not always made available. For example it is unclear how the crude petroleum is priced what is the basis for choosing certain buyers.

ANNEX 1 Crude Petroleum Proved Reserves in Africa[19]

Table 5: Crude Petroleum Proved Reserves (Billion Barrels)

	2008	2009	2010	2011	2012
Africa	**114,8383**	**117,0642**	**119,1142**	**123,6091**	**124,2091**
Algeria	12,2	12,2	12,2	12,2	12,2
Angola	9,035	9,04	9,5	9,5	9,5
Benin	0,008	0,008	0,008	0,008	0,008
Botswana	0	0	0	0	0
Burkina Faso	0	0	0	0	0
Burundi	0	0	0	0	0
Cameroon	0,2	0,2	0,2	0,2	0,2
Cape Verde	0	0	0	0	0
Central African Republic	0	0	0	0	0
Chad	1,5	1,5	1,5	1,5	1,5
Comoros	0	0	0	0	0
Congo (Brazzaville)	1,6	1,6	1,6	1,6	1,6
Congo (Kinshasa)	0,18	0,18	0,18	0,18	0,18
Cote dIvoire (Ivory Coast)	0,1	0,1	0,1	0,1	0,1
Djibouti	0	0	0	0	0
Egypt	3,7	3,7	3,7	4,4	4,4
Equatorial Guinea	1,1	1,1	1,1	1,1	1,1
Eritrea	0	0	0	0	0
Ethiopia	0,00043	0,00043	0,00043	0,00043	0,00043
Gabon	2	2	2	2	2
Gambia, The	0	0	0	0	0
Ghana	0,015	0,015	0,015	0,66	0,66
Guinea	0	0	0	0	0

[19] These figures are not fully updated. Major petroleum (and gas) discoveries have been done in 2012, and the full picture will not be clear until 2013.

Guinea-Bissau	0	0	0	0	0
Kenya	0	0	0	0	0
Lesotho	0	0	0	0	0
Liberia	0	0	0	0	0
Libya	41,464	43,66	44,27	46,42	47,1
Madagascar	0	0	0	0	0
Malawi	0	0	0	0	0
Mali	0	0	0	0	0
Mauritania	0,1	0,1	0,1	0,1	0,02
Mauritius	0	0	0	0	0
Morocco	0,00084	0,00075	0,00075	0,00068	0,00068
Mozambique	0	0	0	0	0
Namibia	0	0	0	0	0
Niger	0	0	0	0	0
Nigeria	36,22	36,22	37,2	37,2	37,2
Reunion	0	0	0	0	0
Rwanda	0	0	0	0	0
Saint Helena	0	0	0	0	0
Sao Tome and Principe	0	0	0	0	0
Senegal	0	0	0	0	0
Seychelles	0	0	0	0	0
Sierra Leone	0	0	0	0	0
Somalia	0	0	0	0	0
South Africa	0,015	0,015	0,015	0,015	0,015
Sudan and South Sudan	5	5	5	5	5
Swaziland	0	0	0	0	0
Tanzania	0	0	0	0	0
Togo	0	0	0	0	0
Tunisia	0,4	0,425	0,425	0,425	0,425
Uganda	0	0	0	1	1
Western Sahara	0	0	0	0	0
Zambia	0	0	0	0	0
Zimbabwe	0	0	0	0	0