

INTOSAI



INTOSAI



Knowledge Sharing & Knowledge  
Services Committee



**TRAINING FRAMEWORK  
FOR AUDIT OF  
EXTRACTIVE INDUSTRIES**

**EI TRAINING FRAMEWORK  
2019**

EI TRAINING FRAMEWORK



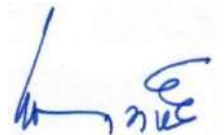
## Quality Assurance Certificate

### Chair of the Goal 3: Knowledge Sharing and Knowledge Services Committee

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Based on the assurance provided by the Chair of the Working group on ***Audit of Extractive Industries*** and the assessment by the Goal Chair, it is certified that the ***Extractive Industries Training Framework, which*** is placed at level ***3 (three)*** of Quality Assurance as defined in the paper on "Quality Assurance on Public goods developed outside Due Process" approved by the INTOSAI Governing Board in November 2017, has been developed by following the Quality Assurance process as detailed in the Quality Assurance Certificate given by the Working Group Chair.

The product is valid till ***30<sup>th</sup> October 2021*** and, if not reviewed and updated by ***30<sup>th</sup> October 2021***, it will cease to be a public good of INTOSAI developed outside the Due Process.



**Rajiv Mehrishi**  
Chair of INTOSAI Knowledge Sharing and  
Knowledge Services Committee





## Quality Assurance Certificate Chair of the Working Group Audit of Extractive Industries (WGEI)

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This is to certify that *the Extractive Industries Training Framework* which is placed at level **three** of Quality Assurance as defined in the paper on "Quality Assurance on Public goods developed outside Due Process" approved by the INTOSAI Governing Board in November 2017 has been developed by following the Quality Assurance processes as detailed below:

- i. WGEI Learning Task Force developed a draft Extractive Industries Training Framework in January 2018 in Jaipur India*
- ii. Draft circulated to 45 WGEI members in February 2018 seeking their comments.*
- iii. Learning Task Force incorporate comments in April 2018 in Lusaka Zambia*
- iv. Second draft of the EI Training Framework developed.*
- v. Second draft circulated to 45 WGEI members in May 2018 seeking their comments*
- vi. Learning task force consulted about the comments in September 2018*
- vii. Comments addressed and final draft developed.*
- viii. Final draft presented to WGEI Steering Committee for consideration of approval in September 2018*
- ix. EI Training Framework was discussed and approved at annual WGEI Steering Committee meeting in September 2018 in Pretoria South Africa*
- x. The final version of this document was also endorsed in all Members meeting in Manila, Philippines on 27<sup>th</sup> May 2019*

The product developed is consistent with relevant INTOSAI Principles and Standards. The product is valid till **30<sup>th</sup> October 2021** and if it is not reviewed and updated by **30<sup>th</sup> October 2021**, it will cease to be a public good of INTOSAI developed outside the Due Process.

John F. S. Muwanga

**CHAIR OF THE WORKING GROUP ON AUDIT OF EXTRACTIVE INDUSTRIES**



# C O N T E N T S

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## LIST OF ACRONYMS

AFROSAI-E	African Organisation of Supreme Audit Institutions- English
EI	Extractive Industries
EITI	Extractive Industries Transparency Initiative
IDI	INTOSAI Development Initiative
INTOSAI	International Organisation of Supreme Audit Institutions
SAI	Supreme Audit Institution
SDGs	Sustainable Development Goals
WGEI	Working Group on Audit of Extractive Industries
NGOs	Non-Governmental organisations
NRGI	National Resource Governance Institute
PWYP	Public What You Pay
IMF	International Monetary Fund
UN	United Nations
ATAF	African Tax Administration Forum
IPIECA	International Petroleum Industry Environmental Conservation Association

## DEFINITIONS

- Operational staff refers to technical staff of a SAI responsible for implementing policies
- SAI management refers to SAI staff responsible for making strategy and policy within a SAI.



## Foreword

The Working Group on Audit of Extractive Industries (WGEI) was established by the INTOSAI in 2013. Currently, the WGEI has 46 SAIs as its registered members and two observer members namely INTOSAI Development Initiative (IDI) and AFROSAI-E. The WGEI in its mandate regarding capacity building intends to organise and facilitate trainings and workshops based on WGEI members' needs. This is expected to strengthen the capacity of SAIs to carry out high quality audits in the Extractive Industries (EI) sector, thereby promoting transparency, accountability and good governance of the sector.

During the WGEI Steering Committee working meeting that took place in September 2017 in Washington D.C., a Learning Task Force was constituted to draft an Extractive Industries Training Framework based on learning needs of SAIs. It held its first meeting in Jaipur, India from 22nd to 27th January 2018, and its second meeting in Lusaka, Zambia from 9th to 12th April 2018. We acknowledge the inputs received from the SAIs of Uganda, Zambia, Ghana, Norway, Zimbabwe, Ecuador, India, Vietnam and AFROSAI-E for preparation of this Training Framework.

This task force developed the Training Framework based on needs identified by members and on the value chain of EI. A survey questionnaire was also developed and circulated among member SAIs by the INTOSAI-WGEI secretariat about the profile of Extractive Industries, audit mandate, experience in audit of Extractive Industries, capacity and learning needs of INTOSAI- WGEI member SAIs to make this Training Framework inclusive and comprehensive.

We feel that it is desirable that member SAIs constitute task forces in their respective SAIs. These Task Forces are expected to bring out needs that will further contribute to the learning activity and improvement of the Training Framework. We welcome feedback on this Training Framework from the member SAIs.

INTOSAI- WGEI acknowledges the support extended and facilities provided by the SAIs of India and Zambia, and the Learning Task Force for its contribution in preparing this Training Framework.

The objective of the Training Framework is to create an Extractive Industries knowledge base which is designed to strengthen the capacity of Supreme Audit Institutions (SAIs) to carry out high quality audits in the Extractive Industries thereby promoting transparency, accountability and good governance of the sector. The Training Framework will be used as a guide by SAIs and interested stakeholders, within and outside the INTOSAI, to develop course content for training/learning in the audit of extractive industries. This is a living document which is subject to improvement as and when required.



**John F.S. Muwanga**

**Auditor General of Uganda and Chair of the INTOSAI Working Group on Audit of Extractive Industries**

## Module 1:

### An Overview of the Extractive Industries

#### Module Background:

This module is an introductory course to acquire an overview and general knowledge of the Extractive Industries sector.

#### Designed for:

- SAI Management
- Operational staff



#### Course Content:

1. Introduction of the Extractive Industries
  - Characteristics of the Extractive Industries (EI)
  - Benefits/opportunities and challenges of the EI
  - Political economy of the EI (including energy and mineral markets)
  - Resource curse paradox
  - Introduction to fiscal instruments in EI
2. Value chain
  - Industry perspective: Petroleum sector
  - Industry perspective: Mining sector
  - Government perspective: EI value chain
3. Key players and external stakeholders in the EI
  - Local communities
  - SAIs
  - Government authorities
  - Oil, gas and mining companies
  - NGOs (NRGI, PWYP)
  - Multilaterals (World Bank, IMF, UN, etc.)
  - Other global initiatives relevant to EI (ATAF, IPIECA, EITI, etc.)
  - Other stakeholders (e.g. external auditors)
4. The role of SAIs in EI
  - What is the role of SAIs in the EI?
  - Key risks and areas of audit at each stage of the value chain
  - Overview of EI resources, experience, and expertise by country
  - WGEI
5. Introduction to Sustainable Development in EI
  - Introduction to the SDGs
  - Linking EI to the SDGs

#### Course Dissemination

- Lecture
- Group Discussions

**Duration:** 1 day for SAI Management, 2 days for Operational staff

## Module 2: Policy, Legal and Institutional Framework

### Module Background:

The legal framework governing the Extractive Industries (EI) starts with a broader policy for the respective countries. From these policies, governments come up with the laws governing the EI; Regulations to operationalise the laws are then formulated. From these regulations, contracts and agreements are signed between governments and contractors. Guidelines on how to enforce these agreements are also put in place by implementing agencies.

The main risk to government under this step of the value chain is the continued use of outdated legal frameworks and the absence of institutional frameworks. This module is aimed at equipping participants with knowledge on the legal and institutional frameworks governing the EI.

### Designed for:

- SAI Management
- Operational staff

### Course Content:

1. Introduction to legal frameworks in the EI
2. SAI Mandate
  - Review of constitutional mandates of SAIs
  - Review SAI audit Acts and other laws and regulations
3. Review of the legal framework as a crosscutting issue across the value chain
  - EI Provisions under the country Constitution
  - Country level policies in the EI
  - Laws in force in the EI
  - Regulations operationalising the Laws in force in the EI
  - Contracts/agreements in force in the EI
  - Guidelines in force in the EI
  - Unitization Concept
4. Review of the institutional framework as a crosscutting issue across the value chain
  - Regulators
  - Monitors
  - Implementers
  - Artisanal Mining (Small scale)
  - EITI
  - Transparency initiatives
  - Government companies
5. Audit considerations under Legal framework in the EI
  - Risk assessment
  - Recommendations to respond to identified risks

### Course Dissemination

- Lecture
- Group Discussions/ sharing of country experiences for legal and institutional frameworks
- Group exercise on review of various legislation
- Consider the use of the work of an expert lawyer
- Case studies
- Audit reports

**Duration:** 1 day for SAI Management and 2 days for Operational staff

## Module 3: Exploration and Data Management

### Module Background:

This module generally looks at how companies explore, search for and manage the data obtained from the exploration of extractive resources. This exercise may be carried out using different methods including the use of geophysical surveys, seismic surveys, geochemical surveys and other methods. The data obtained through these methods is used to reach a conclusion as to whether there are traces of minerals/petroleum. This data is made available to interested companies to make a decision whether to invest in that country or not. It is also used to estimate how much oil is in place to project and plan for government revenues.

The main risks to government under this step of the value chain are misstatement in the existence, completeness, accuracy and valuation of the exploration and production data in a manner which disenfranchises the citizens, and failure to collect the data. This module is aimed at equipping participants with knowledge on the process of exploration and data management in the EI.

### Designed for:

- SAI Management
- Operational staff

### Course Content:

1. Introduction to Exploration and Data management/ data maps, reprints, tapes and samples used in the EI.
2. Exploration data collection methods
  - Geophysical methods
  - Geochemical methods
  - Geological methods
  - Other methods
3. Basic Geological and Engineering knowledge
  - Collection of exploration data
  - Interpretation of exploration and production data
  - Analysis of exploration/production data
  - Dissemination of Data
4. Review of exploration and production Investment Plan data
  - Review of exploration and production plans
  - Assessment of plan cost benefit analysis
5. Storage and sale of data
  - Existence of data
  - Completeness of data
  - Accuracy of data
  - Valuation of data
  - Security and Data Protection
6. Audit considerations under Exploration and Data management in the EI
  - Risk assessment
  - Audit procedures to respond to identified risks
  - Consider the use of the work of an expert in exploration and data analysis during the audit

### Course Dissemination

- Lecture
- Group Discussions/ sharing of country experiences/audit reports by SAIs
- Group simulation exercise
- Case Studies

**Duration:** 1day for SAI Management and 5 days for Operational staff

## Module 4:

### Award of Contracts and Licenses

#### Module Background:

Governments use different fiscal regimes which are spelt out in agreements in the management of the EI. These agreements guide the operations and relationship between governments and the contracted companies. This relationship constitutes the terms and conditions specified in the contracts. There is a need for SAIs to audit compliance with the terms and conditions specified in the contracts by the contracted companies.

The main risk to government under this step of the value chain is the awarding of contracts/licenses to companies who then fail to exploit the resource as expected for the benefit of the citizens. Another risk is failure to ensure transparency and accountability in the awarding process.

This module is aimed at participants getting knowledge on how governments allocate exploration, development and production rights/licenses to the EI contractors.

#### Designed for:

- SAI Management
- Operational staff



#### Course Content:

1. Introduction to contracts and licenses in the EI
2. Review of the award/licencing/concession process
  - Review of process
  - Methods of awarding and allocating licences
  - Transfer and sale of licenses/permits
3. Fiscal regimes
  - Contractual regimes
  - Concessionary regimes including Public Private Partnerships
  - State monopoly
  - Calculating government take
  - Assessing feasibility of EI Contracts
  - Compliance with the contractual terms and conditions
4. Audit considerations under contract and licenses in EI
  - Risk assessment including fraud and corruption
  - Audit procedures to respond to identified risks

#### Course Dissemination

- Lecture
- Group Discussions/ sharing of country experiences
- Group exercise on calculation of government take
- Consider the use of the work of an expert in fiscal regimes
- E-learning
- Case studies and audit reports

**Duration:** 1 day for the SAI Management and 4 days for Operational staff

## Module 5: Monitoring and Evaluation

### Module background:

Extractive industries, when managed prudently, can generate sustainable development and make a lasting positive impact on the life of citizens. However, without proper monitoring and evaluation policies, the same investments have the potential to destabilise public financial management systems. They can also lead to negative environmental and social impacts and increase the risk of corruption in the value chain.

The objective of the module is to build up the knowledge of SAIs in mitigating the above risks. This course outlines the various complex and interrelated aspects of the value chain in particular monitoring and evaluation which affects the management of revenues for economic diversification and development among others. The main risks are lack of capacity by Government to monitor and enforce compliance to regulations and duplication of roles. The module will provide participants with an understanding of the role of key stakeholders in monitoring and evaluation. This will result in stakeholders working together, each playing their own role to achieve commonly held goals and meaningful outcomes.

### Designed for:

- SAI Management
- Operational staff



### Course content:

1. Monitoring and evaluation throughout the value chain
  - Introduction
  - Key components of monitoring and evaluation (Human resource capacity, reporting, surveys and surveillance enforcement etc.)
  - Monitoring and evaluation policies/regulations at each stage in the value chain
2. Review of the role of the regulators in EI
  - Available legislation in the EI
  - Monitoring and evaluation mechanisms
  - Tracking methodologies
3. Monitoring of materials
  - Inventory categories used
  - Cost of carrying out inventories
  - Health and safety issues in handling inventories
4. Down Stream Petroleum and solid minerals audits
  - Monitoring of supply outlets such as fuel stations
  - Monitoring of metres at the Central Processing Facility (CPF) and at the refinery
  - Monitoring of solid minerals up to selling points
5. Audit considerations under Monitoring and Evaluation in EI
  - Risk assessment
  - Audit procedures to mitigate the identified risks

### Course Dissemination

- Group discussions /Sharing of experiences
- Visual illustrations
- Case studies and audit reports
- E-Learning
- Lecture and Presentations

**Duration:** 1 day for SAI Management and 2 days for Operational staff

## Module 6:

### Assessment and Collection of Revenues

#### Module Background:

There is always a fundamental conflict between resource-rich countries and Extractive Industries companies over the allocation of risk and rewards. Both wish to maximise rewards and transfer risks as much as possible. There is need for auditors to understand the different ways that governments can tap revenue from Extractive Industries.

This module is meant to equip auditors with the skills and techniques to conduct audits on revenue from the Extractive Industries (EI). In addition, this module will enable auditors to analyse the cost structures of EI companies. Auditors will learn how to analyse whether fiscal authorities are ensuring that inter-company transactions are priced in accordance with market conditions for similar goods and services. The main risk to government is transfer pricing by EI companies to avoid taxation, and tax evasion.

#### Designed for:

- SAI Management
- Operational staff



#### Course Content

1. Introduction to Revenue assessment and collection
  - Identification and analysis of the revenue streams in the EI (Tax and Non-Tax revenues in the EI).
  - Commercialisation mechanisms
  - Signature/discovery and production bonuses, Royalties, surface rentals, profit oil, Income & Capital gains tax, dividends, Resource Rental Taxes, revenue-in kind.
  - Understanding the fiscal and macro policy of the country
  - State equity
  - Windfall taxes and production sharing
2. Understanding how revenue is assessed and collected
  - Budgeting for the various types of revenues
  - Assessment of government and company shares
  - Methods of tax collection
  - Revenue forecasting from the EI and other taxes
3. Reporting of costs and revenue
  - Measurement/metering of production volumes consumed and exported by International Oil Companies and government (daily and incremental)
  - Valuation and Pricing of petroleum and minerals (price controls can create hoarding & stock outs)
  - Sale of minerals/oil through middlemen (prices may differ from market prices)
  - Accounting for by-products after refining
  - Net-back issues for the delivery points & pipeline tariffs
  - Crude and Minerals Inventory management - underlifts and overlifts in export pipelines, reservoirs and other surface facilities
  - Cost oil calculation & transfer pricing-related risks
  - Cost allocation between produced gas and oil – overheads allocation
  - Role of EITI in identifying and reconciling revenues collected and comprehensive disclosure of taxes and revenues;
4. Illicit Financial Flows (IFFs) – Definitions and forms of IFFs
  - Transfer pricing (TP)
  - Export Under-invoicing and or import over-invoicing
  - Tax evasion - Beneficial ownership, secrecy jurisdictions, Dual Taxation Agreements/ treaties
  - Base Erosion and Profit Shifting (BEPS)

5. Identification of Agencies responsible for Revenue collection
  - Centralized collection of Revenues
  - Decentralized collection of Revenues
6. Audit considerations under assessment and collection of revenue in EI
  - Risk assessment
  - Audit procedures to respond to identified risks

#### Course dissemination

- Lectures
- Open group discussions
- Services of subject matter experts
- Case studies and audit reports

**Duration:** 3 days for SAI Management and 5 days for Operational staff

## Module 7: Revenue Management and Allocation

### Module background:

In resource-rich countries, oil, gas and mineral revenues offer opportunities to accelerate economic growth, development and reduce poverty. Likewise, their unpredictability, volatility and size relative to the rest of the economy, as well as their finite nature can create perverse incentives, complicating economic management, impeding development and in some cases create conflicts.

Learners will explore and analyse how to address challenges of overdependence on a single source of revenue, over-borrowing, poor public investments, suboptimal commercial investments, destabilising boom and bust, patronages and conflicts between national and subnational authorities. Participants will also review the available tools to address those challenges. Participants will also be exposed to tools describing how revenues can be distributed to national budgets, sovereign wealth funds, sub-national jurisdictions and state enterprises.

The course will prepare learners to analyse the appropriateness of revenue distribution and management by their governments so as to provide advice to policy makers on specific spending and saving choices. In the Revenue Management and Allocation stage of the value chain, the main risk to government is mishandling of resource revenues which may be allocated to non-disclosed bank accounts and flout investment rules.

### Designed for:

- SAI Management
- Operational staff



### Course Content:

1. Fiscal rules describing revenue distribution to:
  - National budgets,
  - Sovereign wealth funds (SWF)
  - Regional/local authorities
  - National oil companies
  - Mineral exploration companies
2. Operation of Sovereign Wealth Funds (SWF)
  - Pros and cons (pre-mature funds)
  - Tracking inflows and withdrawals from the SWF – Accountability mechanisms in place – Banking, Accounting and Auditing



3. Analysis and evaluation of the types of Investments made from EI revenues
  - Nationally - types of budget support (infrastructure development, Research & Development, diversification methods, Dutch disease etc)
  - Internationally (commercial and ethical investments).
  - Managing volatility at Regional/subnational levels
  - Review stabilisation policies for price fluctuations.
4. Audit considerations
  - Risk assessment
  - Recommendations to respond to identified risks

#### **Course dissemination**

- Lectures
- Group discussions and practical skill building
- Presentations by industry and academic subject matter experts.
- Case studies and audit reports

**Duration:** 2 days for SAI Management and 4 days for Operational staff

## Module 8: Environment and Sustainable Development

### Module Background:

Though Extractive Industries are drivers of economic growth there are serious environmental effects associated with them. The effects start right from the exploration stage and extend through the extraction and processing of oil, gas and minerals, and continue after the exploration site has closed. The type and extent of the effects can vary from one stage to another. The auditors of extractive industries may face challenges in respect to selection of audit topics and determining the scope of the audit.

The training under this module should help the auditors when they choose and design audits on environmental impacts of EI activities. The module should enable the Auditors to understand the environmental issues at various stages of the EI value chain, the process of Environment Impact Assessment and the Management / Mitigation of identified impacts. The Auditors should be provided with knowledge on impacts of the extractive industries on land, air, water and ecology.

The extractive industries have intended and unintended social consequences on various social classes. The cultural heritage too gets affected by the operation of these industries. EI projects lead to displacement of people / communities which necessitates compensation and resettlement of project affected persons. Local Content Requirements (LCRs) in terms of policy measures that typically require a certain percentage of intermediate goods used in the production processes to be sourced from domestic manufacturers is an important socio-economic aspect which should also be taken care of by the EI sector.

Sustainable development is gaining importance in all fields and EI is one of the most important sectors for economic development. Participants will be given knowledge so that they can appreciate the sustainability issues during the extraction of minerals, oil or gas. Participants should also be informed about the linkage to Sustainable Development Goals associated with EI.

In addition to the conventional issues of environmental management the participants should also be able to assess/review the concepts of sustainable development framework for EI. The voluntary initiatives of the EI in terms of sustainability reporting, reporting under Extractive Industries Transparency Initiative (EITI) will also be introduced to the participants to the extent of their relationship with the environment. The concept of green mining and the importance of newer technologies for improving efficiencies and reducing carbon/ecological footprints of the extractive industries, health and safety aspects will also be introduced to the learners.

The main risks to governments regarding environmental liabilities are the progressive environmental degradation, loss of biodiversity, occurrence of disasters and improper decommissioning of mines. Other important risks to sustainability include displacement of project affected persons and use of out-dated technologies resulting in unsustainable extraction.

This module is aimed at learners getting knowledge on the environmental impacts, government responses to the same and the considerations for auditing these issues on a standalone basis or as a part of major theme of EI. Environmental issues are cross-cutting and exist throughout the value chain of extractive industries and thus can also be part of audits conducted with a limited scope of an identified part of the value chain.

### Designed for:

- SAI Management
- Operational staff



## Course Content:

1. Environmental and Social Issues in Extractive Industries
  - Environmental and Social issues (including cultural and gender issues) during the life cycle of EI
  - Environmental Impacts of Extractive Industries on:
    - Air (including Noise, emissions during mining, etc),
    - Water,
    - Forests and Biodiversity (on-shore and off-shore ecology),
    - Land degradation e.g. abandoned mines, waste from mining (tailings, industrial waste) and oil spills etc.
2. Management of Environmental and Social Impacts of Extractive Industries
  - Environment Impact Assessments (EIA) and Social Impact Assessments
  - Mitigation of Environmental and Social Impacts, Environmental Management Plans
  - Rehabilitation of Project Affected Persons, Corporate Social Responsibility among EI
  - Impacts of EI activities on wildlife(both off and onshore)
  - Environment Management Systems
  - Health and Safety Issues in EI
  - Mainstreaming of Gender issues in EI
  - Disaster preparedness
  - Disclosure requirements
  - Government responses to the environmental and social problems of Extractive Industries
3. Sustainability Initiatives in Extractive Industries
  - Sustainable Development Framework for Extractive Industries
    - Decommissioning / restoration of mining, extraction or exploration sites
    - Mining technologies and the environment (Green Mining) used in EI
    - Industrial Ecology in EI (Zero Waste)
  - Extractive Industries and SDGs
  - National and Local Content Requirements
  - Other Best Practices
4. EITI, Emissions Reporting, Sustainability Reporting and Environment
5. Choosing and Designing Audit of Extractive Industries from environmental / sustainability perspectives
  - Risk assessment
  - Recommendations to respond to identified risks

### Course Dissemination

- Lectures / presentations and audio visuals
- Group exercises / discussions / sharing country experiences
- Consider the use of the work of environment experts
- Case studies and audit reports
- Field visits and study tours

**Duration:** 2 days for SAI Management and 6 days for Operational staff

## Module 9:

### Audit of Extractive Industries in Digital Environment

#### Module Background:

Data-driven Information Systems have become all-pervasive and impact on all types of activities. The Extractive Industries (EI) sector has also embraced Information Technology and various Enterprise Resource Planning (ERP) systems have been implemented in EI as integrated management of core business processes, often in real-time and mediated by software and technology. ERP systems generally applied in various EI are SAP, RAMCO, SAGE, Oracle, Microsoft dynamics, INFOR, IFS applications etc. These ERPs manage almost every aspect of operations of EI i.e. mine planning, production, contract management, procurement, human resource, sales, finance, legal reporting, assets management etc.

ERP systems are by nature data-driven, very dynamic and subject to rapid changes. This creates a challenge for SAIs to keep pace with these continuous changes and to fully equip their employees to operate effectively in the Information Systems of audited entities. It becomes an uphill task for those SAIs which have inadequate resources in terms of personnel trained in Information Technology. Automation of business operations of EI also provides an opportunity for SAIs in terms of availability of data and understanding of work flows.

Thus, it is very imperative for SAIs to fill the learning gaps in auditing using Information Technology effectively to audit EI which perform majority of their operations in a data-centric ERP environment. ERP systems use and generate huge volumes of data. But big data yields limited information until it has been analysed using proper analytic tools capable of handling such quantity and technique by audit. The massive volumes of data now available inside and outside extractive industries, and the power of new data analytics technologies, are fundamentally changing audit.

Big data and analytics are enabling auditors to review ever-increasing volumes of data. This is changing the nature of audit by enabling auditors to better identify financial and regularity reporting, fraud and operational business risks and tailor their approach to deliver a more relevant audit. The combination of big data, advanced analytics and visualization technologies are delivering audit and business insights that impact the way an audit is planned, executed and delivered. So the learners need to be imparted with basic understanding of ERP systems as well as Data Analytics techniques.

This course is aimed at learners getting knowledge about ERP systems, auditing in ERP systems and use of data analytics techniques for auditing.

#### Designed for:

- SAI Management
- Operational staff



#### Course Content:

1. Introduction to automation of business activities and ERP systems
2. Basic understanding of working in ERP systems
  - Understanding basic terms in ERP systems
  - Components of an ERP system
  - Navigation in ERP systems
  - Introduction to various modules (function areas) in ERP systems
  - Advantages of implementing ERP systems
3. Challenges and opportunities for Audit in ERP environment
4. Audit Planning in ERP environment
  - Audit consideration in ERP environment (identification, assessment and management) Primary assessments of the systems regarding integrity, confidentiality and availability of data / systems. Assessment of need for introduction of IT Auditors
5. Introduction to Data analytics techniques and data analytics software
6. Use of Data analytics software for audit risk assessment, audit analysis and audit evidence

## Course Dissemination

- Lectures
- Practical/hands-on exercises on ERP software
- Case studies and Audit Reports

**Duration:** 1 day for SAI Management and 3 days for Operational staff

## Module 10:

### Accounting Standards in the Exploration for and Evaluation of Mineral Resources

#### Module Background:

Oil and gas accounting is an interesting though specialized area, one that demonstrates many theoretical problems. Standard setting in this area has been the subject of controversy for nearly four decades. This module examines the process undertaken by FASB in developing an accounting standard to the current IASB efforts in coming up with IFRS 6. We explore the various significant accounting issues along the Oil & gas value chain. A comparison is made between the requirements of each standard on recognition, valuation and disclosures of exploration expenses, reserves and inventories. Where gaps exist in the standards, there is further guidance issued by industry experts like UK Standard Operating Accounting Procedures (SOAPs), US Council of Petroleum Accounting Society (COPAS)

This module will acquaint auditors with the accounting knowledge necessary to assess reported figures in financial statements of extractive companies. Moreover for SAIs with mandates to audit NOCs, whose reporting requirements are under the international financial reporting framework, this module will provide the required accounting skills to undertake such audits.

#### Designed for:

- SAI Management
- Operational staff

#### Course Content:

##### 1. Introduction

- Standard setting procedures
- Challenges in development of a global standard for the E&E sector and current initiatives
- Comparisons of the US FASB and IFRS

##### 2. Scope and Recognition

- Scope of the IFRS, FASB, UK SOAP, COPAS
- Recognition of E&E costs under each
- Accounting policy – Successful Costing vs Full Costing, Area of Interest method
- Reserves valuation and recognition
- Decommissioning provisions
- Changes in policy

##### 3. Classification

- Classification of E & E – Tangible or Intangible
- Cash flows and measurement, revaluation

##### 4. Impairment Review

- Impairment indicators for E&E assets
- CGUs classifications

##### 5. Farm-in and out accounting

##### 6. Disclosures

#### Course dissemination

- Lectures /E-learning, eBooks
- Group discussions and practical skill building.
- Case studies and Company financial statements

**Duration:** 2 days for SAI Management and 4 days for Operational staff



# EI TRAINING FRAMEWORK



E I TRAINING FRAMEWORK

