



The Updated Extractive Industries Training Framework



Quality Assurance Certificate

Chair of the Working Group on Audit of Extractive Industries

This is to certify that '***the Updated Extractive Industries Training Framework***' which is placed at level ***three (3)*** 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 members resolved to update the Extractive Industries Training Framework in July 2023.***
- II. In November 2023, the WGEI Secretariat requested the WGEI Learning Taskforce to study the Framework in preparation for the review process in 2024.***
- III. The Secretariat requested WGEI members to share their feedback and experience of using the Framework, and their proposals for updating the document in June 2024.***
- IV. Eight members (8) shared their feedback and experience of using the Framework.***
- V. The Learning Taskforce met in Pretoria, South Africa from 15th to 19th July 2024. The Taskforce reviewed and updated the Framework based on feedback received from members about their experience using the Framework and current developments in the EI sector.***
- VI. The draft updated Framework was sent to WGEI members in August 2024 seeking their comments.***
- VII. Eight (8) members of the working group submitted comments.***
- VIII. The Learning Taskforce addressed the comments and made necessary adjustments in September 2024.***
- IX. Final draft of Updated Framework was presented to the WGEI Steering Committee for discussion and approval in October 2024***
- X. Revised Extractive Industries Training Framework approved at annual WGEI Steering Committee meeting in October 2024.***

The product developed is consistent with relevant INTOSAI Principles and Standards. The structure of the product is in line with the drafting convention of non-IFPP documents.

The product is valid till ***28th October 2027*** and if it is not reviewed and updated by ***28th October 2027***, it will cease to be a public good of INTOSAI developed outside the Due Process.

Edward Akol

Chair of the Working Group Working Group on Audit of Extractive Industries

Quality Assurance Certificate

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



Quality Assurance Certificate of the Goal Chair

Based on the assurance provided by the **INTOSAI Working group on Audit of Extractive Industries (WGEI)** and the assessment by the Goal Chair, it is certified that "***The Updated 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 processes as detailed in the quality Assurance Certificate given by the Working Group Chair.

The product is valid till 28th October 2027 and if it is not reviewed and updated by 28th October 2027, it will cease to be a public good of INTOSAI developed outside the Due Process.

A handwritten signature in black ink, appearing to read 'Girish Chandra Murmu', is written over a thin horizontal line.

Girish Chandra Murmu
Chair of INTOSAI Knowledge Sharing and
Knowledge Service Committee

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LIST OF ACRONYMS

A	AFROSAI-E	African Organisation of English Speaking Supreme Audit Institutions
B	ATAF	African Tax Administration Forum
C	COPAS	Council of Petroleum Accounting Society
D	EI	Extractive Industries
E	EITI	Extractive Industries Transparency Initiative
F	ERP	Enterprise Resource Planning software
G	ESG	Environmental, Social and Governance Frameworks
H	FASB	Financial Accounting Standards Board
I	GRI	Global Reporting Initiative
J	IASB	International Accounting Standards Board
K	IDI	INTOSAI Development Initiative
L	IFRS	International Financial Reporting Standards
M	IMF	International Monetary Fund
N	INTOSAI	International Organisation of Supreme Audit Institutions
O	IPIECA	International Petroleum Industry Environmental Conservation Association
P	IPSAS	International Public Sector Accounting Standards
Q	NGO	Non-Governmental Organisation
R	NRGI	Natural Resource Governance Institute
S	PWYP	Publish What You Pay
T	SAI	Supreme Audit Institution
U	SEEA	System of Environmental Economic Accounting
V	SDGs	Sustainable Development Goals
W	UK SOAP	United Kingdom Standard Operating Accounting Procedures
X	UN	United Nations
Y	UNCTAD	UN Trade and Development
Z	UNODC	United Nations Office on Drugs and Crime
AA	WGEI	Working Group on Audit of Extractive Industries

DEFINITIONS

Extractive Industries – limited to Oil & Gas, Minerals/Metals. Material / Guidelines for other depletable resources like Forests & Fisheries can be obtained from other INTOSAI guidance under WGEA

Operational Staff – SAI staff responsible for implementing the audit plan.

SAI Management - SAI staff responsible for making strategy and policy within a SAI.

INTRODUCTION

The number of modules has been maintained at ten, taking into account the evolution of the extractive industry, the diversification of stakeholders, their specialization and the increasing demands of transparency and sustainability, the Framework has been enhanced with new topics to allow users flexibility to meet present and future capacity needs. The modules have been developed based on the EI value chain and are therefore integrated/ interconnected and indivisible. The modules are designed for all levels of staff in a SAI depending on their needs. Faculties are encouraged to customise the modules to the local EI industry and regulatory environment of the course participants.

The course dissemination methods have been eliminated from each module and shall be determined for each training course in accordance with individual needs, available faculties and principles of andragogy. The selected methods should take into account the latest developments and knowledge in EI. The methods of course dissemination include:

- Group discussions
- Sharing experiences
- Visual illustrations
- Case studies
- Audit reports, AFROSAI-E and INTOSAI internal training documents, Company financial statements
- E-Learning, eBooks
- Lectures
- Audio visuals
- Field visits and study tours
- Practical/hands-on exercises with ERP and other software
- Group simulation exercises
- Presentations by industry, financial, academic and other subject matter experts
- Practical skill building.

The course duration indicated in each module is the minimum time recommended for each module, otherwise duration will depend on the level or depth of course detail in accordance with training requirements. SAIs are encouraged to carry out audits after training in each module. In the case of an audit undertaken under a given module the auditor should consider the linkage of their work to objectives in other modules in the framework. For example, an audit focused on loss of revenue must consider the opportunities for understating revenue that may be assessed in another.

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 (EI) sector. EI in this context refers to minerals and oil and gas per the WGEI Terms of Reference. However, other resources such as forestry and fisheries may have similar or related concepts to minerals, oil and gas.

Course Content:

1. Introduction of the Extractive Industries

- Key definitions
- Overview of EI
- Characteristics of the EI
- Benefits/opportunities and challenges of the EI
- Political economy of the EI (including energy and mineral markets)
- Resource curse paradox

2. Value chain

- Definition and Purpose
- Approaches to value chain - Industry and Government perspective
- EI value chain steps
 - Legal framework
 - Resources exploration
 - Award of contracts and licenses
 - Monitoring of operations
 - Collection of revenue
 - Revenue Management
 - Implementing sustainable policies

3. Key players, external stakeholders, and their roles in the EI

- Identify key stakeholders such as:
 - Local communities
 - Indigenous entities
 - SAIs
 - Government authorities
 - Oil, gas and mining companies
 - NGOs (NRGI, PWYP, etc)
 - Multilaterals (World Bank, IMF, UN, etc.)
 - Other global initiatives relevant to EI (ATAF, IPIECA, EITI, home country legislation, etc.)

- Other stakeholders (e.g. external auditors)
- Discuss the Roles of Stakeholders

4. The role of SAIs in EI

- What is the role of SAIs in the EI?
- Differences in SAI mandates
- Overview of SAI resources, experience, and expertise
- Types of audits that can be performed in EI

5. Discuss Emerging issues such as:

- Illicit Financial Flows (IFF)
- Renewable energy
- Energy transition and legacy effects
- Climate change, including initiatives such as the ClimateScanner
- Space mining
- Deep sea mining
- Geothermal Energy.
- Artificial Intelligence

Duration: 2 days for SAI management and Operation Staff

MODULE 2:

POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

Module Background:

The legal framework governing the Extractive Industries (EI) starts with a broader policy for each respective country. 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 operators. Guidelines on how to enforce these agreements are also developed by implementing agencies.

The main risk to government under this step of the value chain is the inadequacy of, and lack of compliance with the framework. This module is aimed at equipping participants with knowledge on the legal and institutional frameworks governing the EI.

Course Content:

1. Introduction to legal frameworks in the EI
2. SAI Mandate
 - Discussion of legal mandates of SAIs
 - Review and mapping SAI audit Acts and other laws, regulations, and INTOSAI standards
3. Discussion of the legal framework as a crosscutting issue across the value chain
 - EI Provisions under the country's Constitution
 - Country level policies in the EI
 - Laws in force in the EI, e.g. environmental laws, laws relating to Indigenous entities, revenue collection and sharing, oil/gas, mining laws and property laws
 - Regulations operationalising the laws in force in the EI
 - Contracts/agreements in force in the EI
 - Guidelines in force in the EI
 - Types of International agreements, such as Unitization agreements, bi-lateral and multi-lateral agreements
4. Discuss the institutional framework as a crosscutting issue across the value chain
 - Regulators
 - Monitors, such as Third-party monitors
 - Operators
 - Artisanal or Small Scale Mining
 - State-Owned Enterprises
 - Transparency initiatives, such as EITI
5. Audit considerations under the Legal framework in EI

- Responding to risks that have been identified
- Analysing the gaps between the legal framework and the project operational and contract terms
- Role of the SAI and types of audits

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

MODULE 3:

EXPLORATION AND DATA MANAGEMENT

Module Background:

This module 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 potential resources available for exploitation and to identify constraints to project execution and plan for the whole of government priorities.

The main risks to government under this step of the value chain are misstatement in the existence, completeness, accuracy and valuation of the exploration 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.

Course Content:

1. Introduction to Exploration and Data management/ data maps, reprints, tapes and samples used in the EI.
2. Exploration data collection
 - Geophysical methods
 - Geochemical methods
 - Geological methods
 - Geodetic/geospatial methods
 - Physical methods (drilling, etc.)
 - 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 by audited party
 - Adequacy and availability of historic and current data for production monitoring
4. Review of Exploration and Production Investment Plan data
 - Review of exploration and production plans
 - Assessment of plan cost benefit analysis
5. Storage and distribution of data

- Existence of data
- Completeness of data
- Accuracy of data
- Valuation of data
- Maintenance, 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

Duration: 1 day for SAI Management, 5 days for Operational staff

MODULE 4:

AWARD OF CONTRACTS AND LICENCES

Module Background:

This module is aimed at participants getting knowledge on how governments allocate exploration, development and production rights/licenses to EI operators. These processes guide the operations and relationship between governments and the contracted companies. This relationship is governed by the terms and conditions specified in the contracts.

The main risk to government under this step of the value chain is lack of transparency and fairness in allocating exploration and production rights, and failure to award rights through competitive processes to maximise benefits for the citizens.

Course Content:

1. Introduction to contracts and licenses in the EI
 - Definitions
 - Categories of contracts
2. Awarding process
 - Discussion of methodology of awarding process
 - Methods of awarding and allocating licences
 - Transfer and sale of licenses / permits
3. Contract /agreements terms and conditions
 - Contractual systems
 - Concessionary systems
 - State participation through SOEs
 - Other arrangements such as Joint Ventures, Public Private Partnerships, off take agreements, etc.
4. Audit considerations under contracts and licenses in EI
 - Risk assessment
 - i. Fraud and corruption / transparency in awarding contracts and in contractual terms and conditions
 - ii. Compliance with contractual terms and conditions
 - iii. Assessing fairness / transparency of contract terms
 - iv. Capacity/ knowledge gap between the parties
 - v. Assessing feasibility of EI Contracts
 - Audit procedures to respond to identified risks

Duration: 1 day for SAI Management, 4 days for Operational staff

MODULE 5:

MONITORING AND EVALUATION

Module background:

Extractive industries, when managed prudently, can underpin sustainable development and make a lasting positive impact on the life of citizens. However, without proper monitoring and evaluation policies, EIs 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 module will provide participants with an understanding of the role of key stakeholders in monitoring and evaluation. This module outlines various aspects of monitoring and evaluation, which affect management of revenues for economic diversification and development, among others. The main risks include lack of capacity by government to monitor and enforce compliance with laws and regulations, gaps in understanding current Environmental, Social and Governance reporting frameworks, and duplication of roles. There is a need for SAIs to audit compliance by the contracted companies with the terms and conditions specified in the contracts.

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, actors and strategic check points at each stage in the value chain
 - Corporate governance in the extractive industries sector
2. Review of the role of regulators in EI
 - Monitoring and Evaluation legislation in the EI
 - Monitoring and evaluation mechanisms
 - Tracking methodologies
3. Review the role of third party evaluators and reporting frameworks
 - Third party quality control (e.g. umpires)
 - ESG Reporting Frameworks (e.g. GRI, EITI, IFRS)
 - Home country reporting
4. Monitoring of operations and materials
 - Consideration of compliance with operational standards
 - Inventory categories used
 - Cost of carrying inventories

- Health and safety issues in handling inventories

5. Down Stream Petroleum and Solid Minerals audits

- Monitoring of supply outlets such as fuel stations
- Monitoring of meters at the Central Processing Facility (CPF) and at the refinery
- Monitoring of solid minerals movement up to selling points and at the refinery

6. Audit considerations under Monitoring and Evaluation in EI

- Risk assessment
- Audit procedures to mitigate the identified risks

Duration: 1 day for SAI Management, 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 earn revenue and control risks from Extractive Industries.

This module is meant to equip auditors with skills and techniques to conduct audits on assessment and collection of revenue from the Extractive Industries (EI). The auditor should be broad in assessing revenue understatement risk factors such as weak or lack of assessment systems and Institutional capacity. 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, tax evasion and post operation liabilities.

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
- Fiscal Systems e.g. Signature/discovery and production bonuses, Royalties, surface rentals, profit oil, Income & Capital gains tax, dividends, Resource Rental Taxes, revenue-in kind (infrastructure, capital equipment to be supplied under contract), Trusts.
- Understanding the fiscal and macro policies of the country
- Nature of State equity, carried interest, participating interest, back-in rights
- Windfall taxes
- Different methods of Government take (Production sharing, including state share of production)

2. Understanding how revenue is assessed and collected

- Budgeting for the various types of revenues and fines
- Assessment of value of government and company shares
- Methods of tax and royalty collection
- Revenue forecasting from the EI and other taxes

3. Reporting of costs and revenue

- Measurement of production volumes consumed and exported by EI actors and

government (daily and incremental)

- Valuation and Pricing of petroleum and minerals (price controls can create stockpiling, hoarding & glutting stock outs)
- Sale of minerals/oil through middlemen (prices may differ from market prices)
- Accounting for by-products after refining either as revenue or cost
- Net-back issues for the delivery points & tariffs
- Crude and Minerals Inventory management - underlifts and overlifts in export pipelines, reservoirs and other surface facilities to the end point of the contract, unfulfilled contracts for mineral concentrates in transit or unrefined, unmined mineral reserves
- Cost oil calculation & transfer pricing-related risks
- Cost allocation between produced products – overheads allocation, ring fencing

4. Illicit Financial Flows (IFFs)

- Definitions and forms of IFFs (in line with UNODC / UNCTAD manual on IFF)
- Transfer pricing (TP)
- Export under-invoicing and or import over-invoicing
- Tax evasion - Beneficial ownership, secrecy and tax haven jurisdictions, Dual Taxation Agreements/ treaties
- Base Erosion and Profit Shifting (BEPS)

5. Identification of Agencies responsible for Revenue collection

- Centralized collection of Revenues at state level
- Decentralized collection of Revenues at provincial or municipal level

6. Audit considerations under assessment and collection of revenue in EI

- Risk assessment
- Audit procedures to respond to identified risks

Duration: 3 days for SAI Management, 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 and 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, complicate economic management, impede 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 be exposed to tools describing how revenues can be distributed to national budgets, sovereign wealth funds, sub-national jurisdictions and state enterprises.

The module will prepare learners to analyse the appropriateness of revenue distribution and management by government 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 flouting of investment rules.

Course Content:

1. Fiscal rules describing revenue distribution to:
 - National budgets,
 - Sovereign wealth funds
 - Regional/local authorities
 - National oil and mining companies
 - Mineral exploration companies
2. Operation of Sovereign Wealth Funds
 - Introduction to Operation of Sovereign Wealth Funds including;
 - Investment considerations, fund manager, policies, alignment with state and fund objectives
 - Target valuations
 - Portfolio risk management and volatility
 - Performance and asset measurement
 - Responsible investment

- Advantages and disadvantages (premature funds, “resource” curse) (*in many cases, economic growth begins to underperform long before the first drop of oil is produced.*)
- Tracking inflows and withdrawals from the SWF – Accountability mechanisms in place , Banking, Accounting and Auditing
- Case studies of various types of SWF e.g. Norway’s SWF, Chilean Economic and Social Stabilization Fund (stabilization fund), Abu Dhabi Investment Authority (long term savings fund), Ghana's Minerals Income Investment Fund (MIIF), etc.

3. Analysis and evaluation of the types of Investments made from EI revenues

- Nationally, types of budget support (fiscal rules, infrastructure development, Research & Development, diversification methods, Dutch disease, etc.)
- Commercial and ethical investments, domestic and international investments.
- Managing volatility at Regional/Sub-national levels
- Review stabilisation policies for price fluctuations.

4. Audit considerations

- Risk assessment
- Recommendations to respond to identified risks

Duration: 2 days for SAI Management, 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.

This module will enable auditors to understand the environmental impacts of EI on land, air, water and ecology and the issues at various stages of the EI value chain, the process of Environment Impact Assessment and the management / mitigation of identified impacts.

Learners will be introduced to the consequences of EI on various social classes and cultural heritage, displacement of people / communities, local content requirements in EI, the linkage of EI to the Sustainable Development Goals, and sustainability reporting initiatives such as EITI. The module also covers green mining and the importance of newer technologies for improving efficiencies and reducing carbon/ecological footprints of the extractive industries as well as health and safety issues.

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

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.

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)
 - Protected areas
 - Land degradation e.g. abandoned mines, waste from mining (tailings, industrial waste), oil spills, retention ponds, inactive well fields, 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, Environment Management Plans

- Rehabilitation of Project Affected Persons, Corporate Social Responsibility in 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 Frameworks for Extractive Industries
 - Decommissioning / restoration of mining, extraction or exploration sites
 - Analysis of mine closure projects
 - Mining technologies and the environment (green mining) used in EI
 - Industrial ecology in EI (zero waste)
 - Climate Change Resilient Materials
- Extractive Industries and SDGs
- National and Local Content Requirements
- Participation of indigenous Peoples
- Marginalised or vulnerable populations, sustainability considerations
- Other Best Practices

4. Energy transition in Extractive Industries

5. Sustainability, emissions, EITI and ESG Reporting

6. Choosing and Designing Audit of Extractive Industries from environmental / sustainability perspectives

- Risk assessment
- Recommendations to respond to identified risks

Duration: 2 days for SAI Management, 6 days for Operational staff

MODULE 9:

AUDIT OF EXTRACTIVE INDUSTRIES IN THE DIGITAL ENVIRONMENT

Module Background:

The Extractive Industries (EI) sector has embraced the digital environment and various information Technology Systems have been implemented in EI to manage core business processes, often in real-time and facilitated by software. One example is ERP systems which can manage almost every aspect of operations within EI i.e. planning, production, contract management, procurement, human resource, sales, finance, legal reporting, assets management, etc.

Information Technology systems are by nature data-driven, dynamic and subject to rapid changes. This creates a challenge for SAIs to keep pace and to fully equip their employees to engage effectively with audited entities. SAIs which have inadequate personnel trained in Information Technology Systems face an uphill task. However, automation of business operations within EI provides opportunities for SAIs in terms of data availability and work flow comprehension.

Information Technology systems use and generate huge volumes of data; however, this data yields limited information until it has been analysed using tools capable of handling such quantities. The massive volume of data now available inside and outside extractive industries and the corresponding power of data analytics technology is fundamentally changing audit. As a result, SAIs must fill their knowledge gaps in using and auditing information technology systems.

Data and data analytics enable auditors to better identify financial and regularity reporting fraud and operational business risks. Auditors can now more precisely tailor their lines of inquiry to deliver more relevant audits. Increased data volumes, advanced analytics, and visualization technology deliver audit and business insights that impact ways in which audits are planned, executed and delivered. This module imparts learners with a basic understanding of information technology systems and data analytics techniques.

Course Content:

1. Introduction to automation of business activities and Information Technology 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. Other Relevant Information Technology systems
 4. Use of remote sensing and GIS in Audit of EI
 5. Introduction to Data analytics techniques and data analytics software
 6. Use of Data analytics software for audit risk assessment, audit analysis, audit evidence, and Computer Aided Audit Techniques (CAAT)
 7. Challenges and opportunities for Audit in the Information Technology Systems environment
 - Use of Artificial Intelligence and machine learning
 - Cyber Security
 8. Audit Planning considerations in Information Technology Systems environment
 - Risk Assessment
 - Recommendations to respond to identified risks

Duration: 2 days for SAI Management, 3 days for Operational staff

MODULE 10:

ACCOUNTING STANDARDS IN THE EXPLORATION FOR AND EVALUATION OF MINERAL RESOURCES

Module Background:

Extractive Industries sector accounting is a specialized area 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 - Exploration for and Evaluation of Mineral Resources. The module explores the accounting issues along the oil & gas and mineral 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 such as the United Kingdom Standard Operating Accounting Procedures (SOAPs), United States Council of Petroleum Accounting Society (COPAS).

Further, the application of the System of Environmental Economic Accounting (SEEA) framework of the Statistics Division of the Department of Economic and Social Affairs of the United Nations for extractive Industries needs to be emphasized as well as IFRS S1 on General Requirements for Disclosure of Sustainability and IFRS S2 on Climate related Disclosures.

This module will acquaint auditors with the accounting knowledge necessary to assess reported figures in financial statements of extractive companies and the skills to audit National Oil Companies.

Course Content:

1. Introduction

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

2. Scope and Recognition

- Scope of the IFRS, FASB, UK SOAP, COPAS, SEEA and IPSAS
- Recognition of Exploration and Evaluation (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 Exploration and Evaluation (E&E) – Tangible or Intangible
- Cash flows and measurement, revaluation

4. Impairment Review

- Impairment indicators for Exploration and Evaluation assets
- Cash Generating Unit (CGU) classifications

5. Farm-in and Farm-out accounting

6. Disclosures under the various standards

Duration: 3 days for SAI Management, 5 days for Operational staff

ANNEX 1: QUALITY ASSURANCE PROCESS

- During the WGEI all-members meeting in Jakarta, Indonesia in July 2023 the members resolved to update the Extractive Industries Training Framework.
- The WGEI Secretariat sent the Framework to the WGEI Learning Taskforce in November 2023, requesting it to study the document in preparation for the review process in 2024.
- The Secretariat communicated to the members of the working group in June 2024 informing them of the planned review and update of the Extractive Industries Training Framework. The members were requested to share their feedback and experience of using the Framework, and their proposals for updating the document.
- Eight members (8) shared their feedback and their experience of using the Framework.
- The Learning Taskforce comprising of representatives from the SAIs of India, Indonesia, Kenya, Norway, Uganda, United States, Zambia, Zimbabwe, and AFROSAI-E and the Canadian Audit and Accountability Foundation (CAAF) met in Pretoria, South Africa from 15th to 19th July 2024. The Taskforce reviewed and updated the Framework based on feedback received from members about their experience using the Framework and current developments in the EI sector. (*Annex 2 shows how members' feedback was addressed*).
- The draft updated Framework was sent to WGEI members in August 2024 seeking their comments.
- Eight (8) members of the working group submitted comments.
- The Learning Taskforce addressed the comments and made necessary adjustments in September 2024 (*Annex 3 shows how the comments were addressed*).
- Final draft of Updated Framework was presented to the WGEI Steering Committee for discussion and approval in October 2024
- Revised Extractive Industries Training Framework approved at annual WGEI Steering Committee meeting in October 2024.

ANNEX 2: RESOLUTIONS TO FEEDBACK AND PROPOSALS FOR IMPROVEMENT OF EXTRACTIVE INDUSTRIES TRAINING FRAMEWORK

Feedback Received

S/NO	SAI	FEEDBACK
1	Egypt	Feedback provided and improvements proposed
2	India	Feedback provided and improvements proposed
3	Indonesia	Feedback provided and improvements proposed
4	Kenya	Feedback provided and improvements proposed
5	Uganda	Feedback provided and improvements proposed
6	Vietnam	Feedback provided and improvements proposed
7	Zambia	Feedback provided and improvements proposed
8	Zimbabwe	Feedback provided and improvements proposed

Resolution of Feedback

S/NO	COMMENT	RESOLUTION
1	Egypt	
1.1	<u>Content list:</u> <ul style="list-style-type: none"> Update the table of contents Differentiate between the list of acronyms and numbering of module 	Framework adjusted accordingly
1.2	Proposal to adjust the duration of various modules	<p>The Taskforce resolved to provide a minimum course duration as a guide.</p> <p>However, the actual duration, depth and detail of the course content will be determined by the training organisers and facilitators based on participant needs</p>
1.3	<u>Module 5:</u> Adding to the course content: The impact of corporate governance in the extractive industries sector	Framework adjusted to include topic
1.4	<u>Module 8:</u> Include the topic: <i>An overview on energy transition and its impact on extractive industries</i>	Framework modified to include topic of <i>Energy transition</i>
1.5	<u>Module 9:</u> Add to course content:	Framework modified to include topics. Mining data covered under

	<ul style="list-style-type: none"> • An overview on Mining Data as a process of knowledge extraction from large amounts of data. • An overview on using artificial intelligence (AI) applications in the extractive industries sector. 	data analytics technics and software.
1.6	Include E-learning and audit reports as course dissemination methods	E learning and audit reports listed in introduction as some of the course dissemination methods for all modules. To be used when appropriate
2	India	
2.1	<u>Module 1:</u> Under emerging issues add <ul style="list-style-type: none"> • Transition to clean energy and the implications for the extractive industries, especially about rare earth minerals etc. • Using renewable energy in mining process. 	Topics of <i>energy transition and renewable energy</i> included in Framework
2.2	<u>Module 3:</u> Under Audit Considerations include: Adequacy and availability of remote and near real time availability of data for monitoring.	Topic covered under module 3: <i>Basic Geological and Engineering knowledge</i>
2.3	<u>Module 4:</u> <ul style="list-style-type: none"> • Under awarding process include - Challenges and Opportunities in E Bidding. • Under audit considerations – modify the first bullet to read ‘Review of the bidding process/e bidding.’ 	<ul style="list-style-type: none"> • Topic covered under methods of awarding contracts and licences because most methods today include the component of e bidding. • Taskforce resolved to maintain the topic of <i>Fraud and corruption in awarding contracts and licences</i> because it is of particular concern in EI and results in significant loss of revenue.
2.4	<u>Module 5:</u>	Proposal included in a modified form

	Under Monitoring and evaluation throughout the value chain - Amend bullet 3 to read ‘Monitoring and Evaluation policies/regulations at each stage in the value chain and identify key Monitoring and Evaluation checkpoints at each stage.’	
2.5	<u>Module 6:</u> Under - Reporting of costs and revenue Proposed modification of 9th bullet: • Role of Extractive Industries Transparency Initiative (EITI) in identifying and reconciling revenues collected and comprehensive disclosure of taxes and revenues; Disclosures related to revenue from Energy Transitions as in 2023 EITI Standards.	The Taskforce resolved that the EITI was better covered as a transparency initiative in module 1 and a sustainability-reporting framework under module 8.
2.6	<u>Module 7:</u> Proposed addition of 4th bullet: Introduction to principles of Asset Accounting Case studies of various types of SWF like Norway’s SWF, Chilean Economic and Social Stabilization Fund (stabilization fund), Abu Dhabi Investment Authority (long-term savings fund) etc.	Proposal included in a modified form
2.7	<u>Module 8:</u> Include Gender equality and the energy transition as sustainability issues	Topics included in Framework
2.8	<u>Module 9:</u> Include the topic of Remote Sensing and Geographic Information System (GIS)	Included in the Framework
2.9	<u>Module 10:</u> Include in the module background a reference to ‘ <i>the application of System of Environmental-Economic Accounting (SEEA) framework of the Statistics Division (Department of Economic and Social Affairs), United Nations for extractive industries needs to be emphasised.</i> ’ Emphasise the scope of this framework.	Included in Framework
3	Indonesia	
3.1	Improve the modules by incorporating: <ul style="list-style-type: none"> • Standardized slides and notes • Exercises for participant • Suggested solution for the exercises 	Standardized slides and notes, and Field Trip guidebook may form part of another product (eg <i>EI Content Curriculum</i>) that is

	<ul style="list-style-type: none"> • Session-at-a-glance (SAAG) for facilitators • Field Trip guide book 	<p>separate from the Framework. Taskforce to consider possibility of developing such a product.</p> <p>Exercises for participants, Suggested solutions for the exercises and Session-at-a-glance (SAAG) for facilitators are course dissemination methods. The introduction to the Framework states that the methods of dissemination will be determined based on the requirements of the course participants. Therefore, these methods will be employed when appropriate.</p>
3.2	Include the use of technology such as GIS and Modelling software	<i>Module 9: Audit of extractive industries in the digital environment</i> enhanced to include recent developments in technology
3.3	Create flexibility in the modules to include: <ul style="list-style-type: none"> • Production Sharing Contract • Concession Contract • decommissioning or restoration budget mechanism • sovereign wealth fund • Energy transition policy 	<p>Framework content enhanced to include the energy transition topic.</p> <p>The other topics are covered by different modules of the Framework</p>
4	Kenya	
4.1	Indicate in the framework the types of audits the framework is targeting (It can be all three). This will guide SAIs who are new to EI	<p>The Taskforce noted that the Framework is designed to equip auditors with Knowledge to undertake audits in EI.</p> <p>It is left to the discretion of the SAI to determine the most suitable type of audit to undertake following risk assessment of its country's EI sector.</p>

4.2	The framework may be arranged in a way that it can categorise basic/beginners, Intermediate and advanced modules. (Some topics can have modules in all categories) This will help in progressive learning	<p>The Taskforce resolved that the modules are suitable for all categories of learners. The content maybe simplified, summarised or advanced depending on the needs of the participants.</p> <p>The level of complexity of the course content will be determined by the training organisers and facilitators after assessing the learning needs of the course participants as indicated in the introduction to the Framework</p>
4.3	Most of the modules do not have developed material/content. Such content will be useful for the training program. WGEI can fast-track development of content along the current or future framework modules	Comment noted. Learning Taskforce to consider developing course content for the modules.
4.4	The Module should incorporate emerging aspects of EI e.g Energy transition, ESG reporting, IT systems and tools, IFFs, Public private partnerships (PPPs) and Climate action among others	Framework revised to incorporate emerging issues in Extractive Industries
4.5	Framework may be reviewed to consider balanced coverage to various aspects of EI (Mining and Oil & Gas and any other new areas that may be incorporated). Also, the framework should look into balancing various regimes in EI	Framework revised to create a better balance between oil and Gas on the one hand and mining on the other. Note taken of the specific experiences of SAIs in their countries
4.6	The framework should encompass uniform learning approach for all modules (contact and virtual). Some modules can have both approaches especially basic/beginners with the more technical ones requiring physical training	<p>Course dissemination methods removed from each module.</p> <p>Introduction to Framework lists examples of course dissemination methods and guides that they will be selected based on the needs of the training participants</p>
4.7	The framework not need to indicate duration segregation between SAI Management and Operational staff while maintaining the same	The Taskforce resolved to maintain the segregation in minimum duration between SAI

	content. Instead, the trainers of the course may develop a high-level summary for SAI management staff.	Management and Operational staff as a guide. However, the actual duration, depth and detail of the course content will be determined by the training organisers and facilitators based on participant needs
4.8	WGEI secretariat may develop an annual program/timetable for the framework (they can work with willing members to provide or host the training on scheduled dates and share the same to SAIs	Comment noted. Secretariat to develop annual training programme
4.9	The training framework needs to be publicised within the INTOSAI community and among other stakeholders. Currently, few SAIs including members know of its existence	Comment noted. WGEI Secretariat to undertake a publicity campaign of all WGEI products in 2024 - 2025
5	Uganda	
5.1	Sustainable development: include other voluntary initiatives in addition to EITI	Included topic on Environmental, Social and Governance Frameworks (ESG) to cover other voluntary frameworks
5.2	Include more on the topics of: <ul style="list-style-type: none"> • Local Content Regulation • Sovereign Wealth Funds 	Topics covered in the Framework. Greater detail to be provided in the course of disseminating training
5.3	Include the energy transition in the Framework	Topic included in modules 1 and 8
6	Vietnam	
6.1	The proposed time allocation for SAI Management (15 days) and Operational staff (37 days) are deemed excessive and necessitates a critical review to ensure feasibility and effectiveness. Reduce duration for modules 3, 6, 8, and 10	The Taskforce resolved to retain a minimum recommended course duration to guide facilitators when preparing the course content. The Taskforce recognises the varying needs of SAIs and therefore, the introduction to the Framework recommends that the actual course duration will be determined by the learning needs of the course participants

6.2	Module 3's content appears to be highly technical on extractive industries, potentially exceeding the specific knowledge requirements for auditors. Explore options to streamline this module's content, potentially aligning it more closely with the needs of auditors.	Comment noted. Some terms simplified. Further, course-training material will be streamlined to align with the needs of auditors.
6.3	Consolidate Module 3: <i>Exploration and Data Management</i> with Module 9: <i>Audit of Extractive Industries in Digital Environment</i> to enhance programme efficiency	The Taskforce resolved to retain module 3 and module 9 as separate modules because they focus on different aspects of the Extractive Industries with different risks. Module 3 focuses on collection and use of information during the extraction process, while module 9 focuses on the use of information technology tools in EI
6.4	Consolidate Module 5: <i>Monitoring And Evaluation</i> with Module 8: <i>Environment and Sustainable Development</i> because environmental and sustainable development risks are likely already addressed within the risk assessments covered in Module 5	The Taskforce resolved to retain module 5 and module 8 as separate modules because they cover different stages of the EI Value Chain and knowledge of every step of the value chain is relevant when undertaking EI audits
7	Zambia	
7.1	Provide continuous training based on Framework to improve weaknesses in EI Value Chain	Comment noted. Learning Taskforce to develop schedule of WGEI training programmes
7.2	Continuous interaction with other SAIs that have done a work and trainings in the EI	Comment noted. WGEI Secretariat to engage Steering Committee members responsible for the benchmarking activity to arrange such interaction
8	Zimbabwe	
8.1	Include evaluation criteria for each module to assess learning and feedback by participants	Comment noted. Framework designed to outline subjects auditor needs to be

		<p>aware of in order to audit the EI. Evaluation criteria and assessment tools are best developed when developing content for specific training.</p> <p>WGEI Secretariat to inform training organisers and facilitators of the need to assess learning and receive feedback</p>
8.2	Consider including exercises and questions at the end of each module	<p>Comment noted.</p> <p>WGEI Secretariat to inform training organisers and facilitators to consider including exercises and questions as part of course dissemination for training courses</p>
8.3	Clearly indicate the type of audit per each topic and justification	<p>The Taskforce resolved that the Framework is designed to equip auditors with Knowledge to undertake audits in EI.</p> <p>It is best for the SAI to determine the most suitable type of audit to undertake following risk assessment of its country's EI sector.</p>
8.4	Provide sample handouts, case studies and group assignments for each module	<p>The Secretariat has uploaded material from previous training courses on the WGEI webpage of the INTOSAI Community Portal that is accessible to all.</p> <p>The Taskforce will consider developing a separate product such as an <i>EI Curriculum</i> which may include handouts, case studies and suggested assignments</p>

ANNEX 3: RESOLUTIONS OF COMMENTS ON REVISED EXTRACTIVE INDUSTRIES TRAINING FRAMEWORK

Feedback received

S/No	SAI	Feedback
1	Chile	Feedback provided and changes suggested
2	Egypt	In agreement. No changes suggested
3	Fiji	Feedback provided and changes suggested
4	Guyana	In agreement. No changes suggested
5	India	In agreement. No changes suggested
6	Nigeria	Feedback provided and changes suggested
7	Pakistan	Feedback provided and changes suggested
8	Vietnam	In agreement. No changes suggested

Resolution of comments

S/No	Comment	Resolution
1	Chile	
1.1	<p><u>Module 1: Course content No.5 (bullet 4)</u></p> <p>It may be beneficial to refer to ClimateScanner and highlight the significance of national regulations in achieving climate change commitments</p>	Reference to ClimateScanner included in the Framework
1.2	<p><u>Module 5: Course content No. 6 (Audit considerations under Monitoring and Evaluation in EI)</u></p> <p>It would be beneficial to address the important issue of health and safety.</p>	<p>The Task Force agrees that health and safety is an important issue under the EI.</p> <p>Health and Safety is included under Module 8: Environment and Sustainability, where it is thought to be more closely related to the rest of the content in the module.</p>
1.3	<p><u>Module 8: Environment and Sustainability</u></p> <p>It may be interesting to analyse the conflicts that can arise in an extraction</p>	The proposal falls in the broader topics of conflict resolution and the judicial process, which is beyond the ordinary scope of EI audit.

	project and the possible stages before the sectoral bodies and/or the courts.	The Task Force recommends that if the topic is relevant to a particular SAI, then the content of a training workshop will be customised to address this need.
1.4	<u>Module 8: Module background</u> It may be interesting to analyse mine (minerals and oil and gas) closure projects.	Topic included in the Framework
1.5	<u>Module 8: Course Content No.1 (Environmental and Social Issues in Extractive Industries)</u> It would be beneficial to analyse the level of participation of local communities and indigenous peoples, as well as the potential for them to influence the project.	Participation of local communities falls under the topic of national and local content requirements, which is already included in module 8, course content number 3. Details of the subject will be elaborated on during course dissemination. Participation of indigenous peoples included in the module
1.6	<u>Module 8: Course Content No.1 (bullet 2)</u> Perhaps it would be interesting to address the important issue of extractive industries in protected areas.	Topic included in Framework
1.7	<u>Module 8: Course content No. 2 (Management of Environmental and Social Impacts of Extractive Industries)</u> It may be beneficial to consider the potential implications of unexpected changes in the assessed and approved environmental variables.	The subject is covered under the topic of <i>environment management plans</i> .
1.8	<u>Module 8: Course content No. 2 (bullet 7)</u> It may be advisable to consider the impact on gender and other vulnerable groups in general.	The topic of vulnerable groups is covered under module 8 course content number 3

1.9	<p><u>Module 8: Course content No. 4 (Energy transition in Extractive Industries)</u></p> <p>It would be beneficial to link this to the countries' obligations under their climate change commitments</p>	<p>The comment is noted.</p> <p>Because the obligations are country specific, the linkage will be made during course dissemination, taking into account the needs of the training participants.</p>
2	Fiji	
2.1	<p>There needs to be a detailed “Participant’s Guide” and Trainer’s Guide” to accompany this Training Framework. Also, a form of “Assessment & Solutions Feedback Guide” together with a “Follow - Up & Evaluation Guide” as well.</p>	<p>The Task Force acknowledges the relevance of the proposed products, and further consultations will be undertaken to consider developing them.</p> <p>The introduction to Framework contains a few guidance notes for participants and trainers on its utilisation.</p>
2.2	<p>When the training is performed by the facilitator examples and references are also made in the context of SAIs in PASAI region since most of the PASAI community do not have oil and gas EI.</p>	<p>The comment is noted and will be taken into account when designing region specific training courses.</p>
2.3	<p><u>Module 8: Environment and Sustainability</u></p> <p>Discuss “Climate Change Resilient Materials” to mitigate against climate change risks due to EI.</p>	<p>Topic included in Framework</p>
2.4	<p>Consider the time factor when training is provided since the PASAI region has a different time zone.</p>	<p>The comment is noted and will be taken into account when designing region specific training courses.</p>
2.5	<p>Consider recording trainings and availing it on the EI portal or website.</p>	<p>The comment is noted. Efforts will be made to engage training organisers and faculties to record trainings and make them available.</p>
3	Nigeria	

3.1	Various suggestions to slightly alter wording, without changing the meaning.	Framework adjusted accordingly.
4	Pakistan	
4.1	<p><u>Evaluation of Learning Outcomes</u></p> <p>The training framework should have a clear mechanism for evaluating participant progress and the effectiveness of the training. It would be beneficial to develop specific learning outcomes for each module. This can be achieved by integrating assessment mechanisms such as quizzes, tests, or practical evaluations. These tools will help measure participant learning and assess the overall impact of the training.</p>	<p>The Task Force agrees with the importance of assessing the effectiveness of training.</p> <p>It will be left to the organisers and faculties to develop learning outcomes and assessment tools for the modules based on the needs of the training participants.</p>
4.2	<p><u>Customization for Regional Needs</u></p> <p>While the document provides a global overview, it should also account for the variations in extractive industry practices, laws, and policies across different regions. Including region-specific modules or examples would enhance the relevance of the content. By tailoring the training to reflect regional differences, participants would gain more applicable insights based on their local industry and regulatory environment.</p>	<p>The Framework is designed to give a global overview for training EI auditors.</p> <p>Due to variation in regional and SAI requirements, it is expected that the trainers will customise the module content to their participants.</p> <p>The introduction to the Framework encourages training organisers to customise training</p>
4.3	<p><u>Engagement with Feedback</u></p> <p>There should be a formal mechanism for collecting and using feedback to improve the training. Implementing a feedback loop that includes surveys, post-training evaluations, and feedback forms would ensure that the training content and delivery methods are continually refined based on participant</p>	<p>The comment is noted.</p> <p>The WGEI Secretariat, Training Facilities and SAIs will be engaged to implement a feedback mechanism post-training.</p>

	experiences. This process would foster ongoing improvements to the program.	
4.4	<p><u>Cross-Module Linkages</u></p> <p>The document should emphasize how the various modules relate to one another. Highlighting these connections can help learners understand the broader context of their training. For example, emphasize how revenue collection (Module 6) impacts policy and legal frameworks (Module 2) or how environmental sustainability (Module 8) influences overall governance and monitoring practices (Module 5). This will help learners see the bigger picture and understand how different aspects of extractive industry audits are interrelated</p>	<p>The introduction to the Framework states that the modules are based on the EI value chain and are interrelated.</p> <p>The EI value chain is covered under module 1: An Overview of the Extractive Industries.</p> <p>As a matter of practice, all training courses cover module 1 in order to give participants a broad overview of EI.</p> <p>It is expected that after the module 1 sessions, learners will have an understanding of how the modules in the Framework are interrelated.</p>