

Environment and social issues in the extractive industry

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OUTLINE OF PRESENTATION

- Brief Introduction/background
- Concepts
- Environmental/Social issues – EI focus
- Managing environmental impacts in E.I – Audit focus

EXPECTED LEARNING OBJECTIVES

At the end of this session, participants should be able to:

- identify and understand the environmental and social concerns in the extractive industry
- Appreciate government approach to managing these concerns
- Understand auditing approaches for the environmental concerns in the extractive sector.

Introduction/background

- The extractive sector has been identified by most countries globally as a potential catalyst for economic development,
- About 3.5 billion people live in countries rich in petroleum (oil and gas) or minerals.
- There is a determined effort to develop the sector and to make it **more attractive to investors. (revenue, profits, environmental protection???)**
- With good governance and transparent management, the revenues from EI can have an impact on reducing poverty and boosting shared prosperity, while respecting community needs and the environment.



Introduction/background

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



Introduction/Background

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



Introduction/Background

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



Introduction/Background

- In line with INTOSAI – P 12, SAIs need to be able to add value to society and make a difference in the lives of citizens by carrying out audits of the EI sector.
- To ensure that elected officials act in the best interests of the citizens they represent, governments and public sector entities need to be accountable for their stewardship over, and use of, public resources.



Environmental Auditing

- An environmental audit is a systematic examination to assess a company's environmental responsibility. It aims to identify environmental compliance, verify environmental responsibility implementation gaps whether they meet stated objectives, along with related corrective actions.



Environmental Auditing

- The purpose of an environmental audit is to: **assess the nature and extent of the risk of harm to human health or the environment.** This may be from contaminated land, waste, pollution or any activity. recommend measures to manage the risk of harm to human health or the environment.





THE AUDIT PROCESS

The audit process

Financial Audits

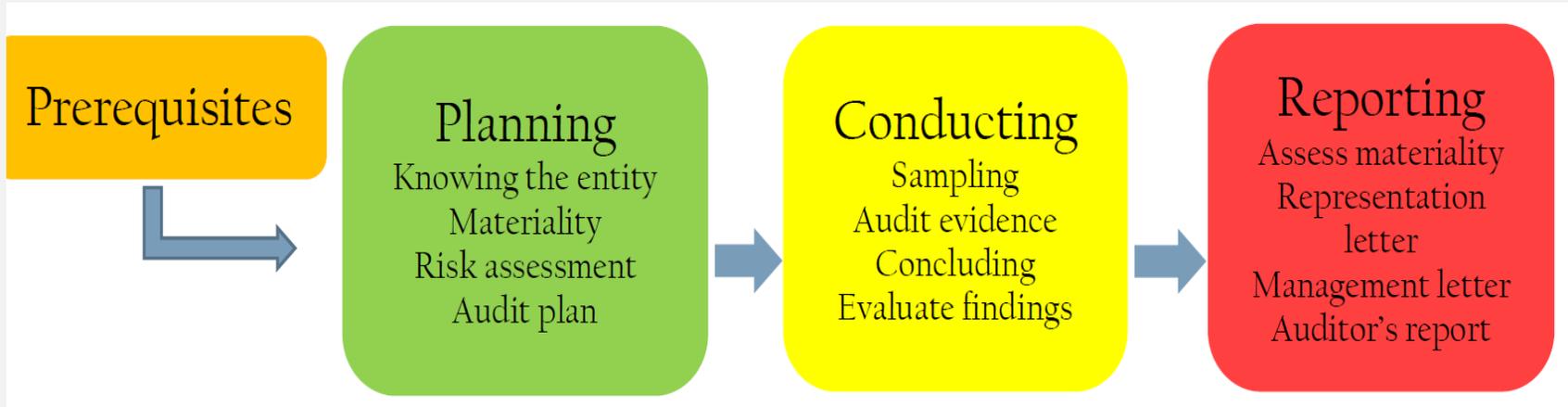
The audit of financial statements requires the auditor to consider environmental regulations as part of the audit, and in particular environmental issues and matters if they have material effect on the financial statements.

During an audit of financial statements, the following environmental issues may arise :

- initiatives to prevent, abate or remedy damage to the environment;
- the conservation of renewable and non-renewable resources;
- the consequences of violating environmental laws and regulations; and
- the consequences of vicarious liability imposed by the state.

➤➤ Basic Audit Process –**Financial Audit**

(i) For Financial Audit on Environmental Topic - The following framework can be followed



- Accurate accounting for all environmental funds and liabilities

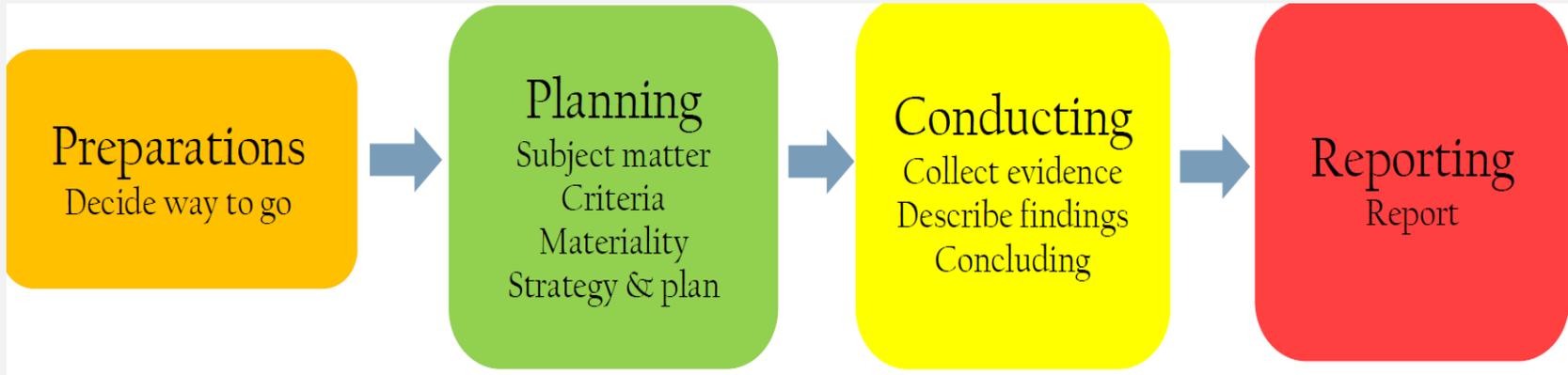
The audit process

Compliance auditing

Compliance auditing with regard to environmental issues may relate to providing assurance that governmental activities are conducted in accordance with relevant environmental laws, standards and policies, both at national and international (where relevant) levels.

➤➤ Basic Audit Process – Compliance Audit

(i) For Compliance Audit on Environmental Topic - The following framework can be followed



Compliance with rules, legislation, regulations, and internal and external policies.

Departmental accountability and Gaps or inconsistency in environmental legislation

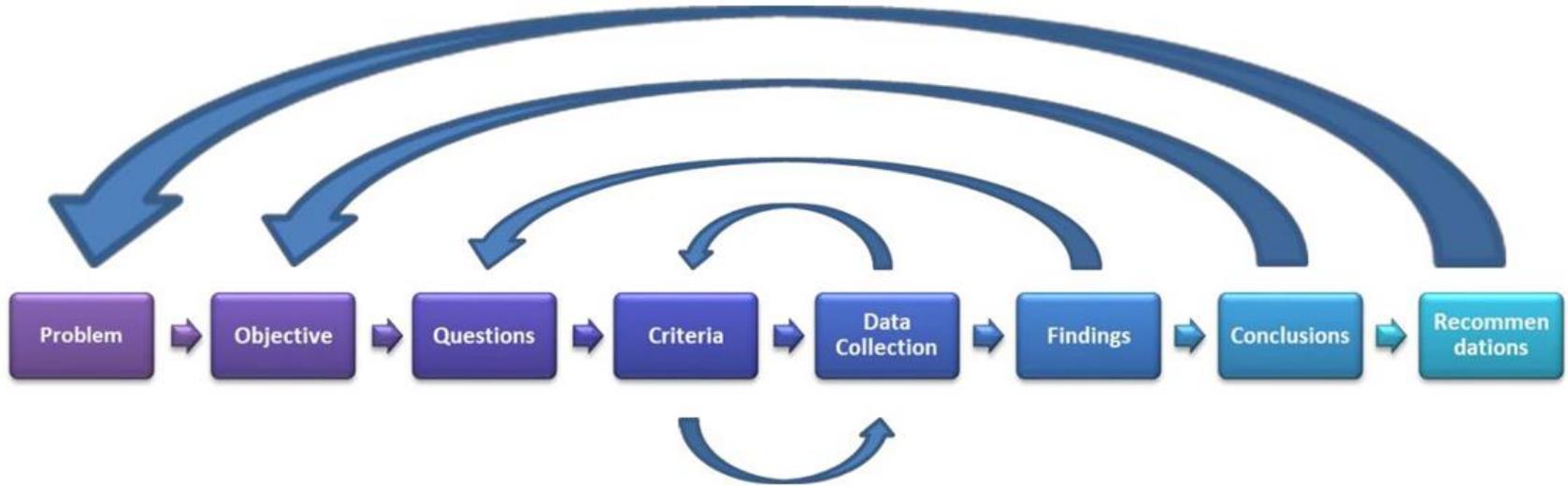
The audit process

Performance auditing

- Performance auditing of environmental activities may include ensuring that indicators of environmental-related performance that are adequate to fairly reflect the performance of the audited entity; and environmental programmes are conducted in an economical, efficient, and effective manner, resources or management practices are shared/done equitably

Basic Audit Process – Performance Audit

For performance audit on Environmental Topic - The following model can be used





Environment and Social Issues

Discussion 1 - (30 Minutes)

In your country teams:

1. List and discuss three of the most pressing environmental challenges associated with the extractive industry in your country? Rank the three in order of your priority.
2. What social issues are connected to the three environmental challenges discussed above. (list two each)
3. What management practice has your government adopted in solving these practices
4. Which audit methodology would you adopt in auditing such a problem and why?

ENVIRONMENTAL AND SOCIAL ISSUES

Environmental issues

- Climate change
- Deforestation/Habitat destruction/loss of biodiversity
- Soil erosion/land degradation
- Pollution (air, water)

Social issues

- Child labour issues
- Social Displacements/relocations
- Economic displacements
- Corruption
- Strain on Infrastructure and local services
- Migration
- Conflict over natural resources

Quotable Quotes

We are wasting our water mostly by putting waste into it. One cubic meter of wastewater can pollute ten cubic meters of water. Discharging wastewater into oceans turns freshwater into the less useful salty stuff, and desalination is expensive.

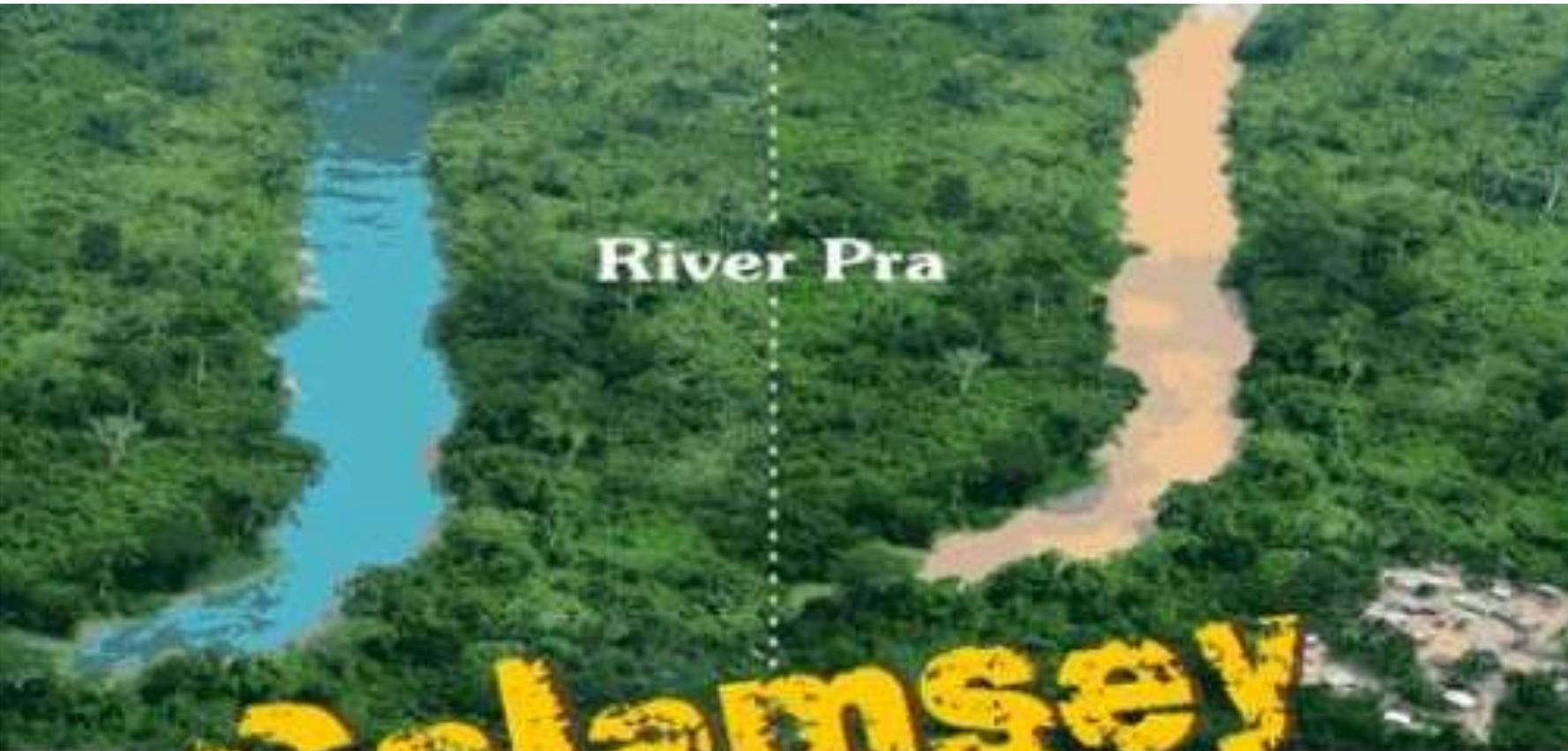
Rose George

PICTUREQUOTES.COM

Water pollution

Extractive industries activities (mining) has the potential to cause water pollution if left unchecked. These include:

- *Metal Contamination (arsenic, mercury, cyanide poisoning)*
- *Increased sediment levels in streams*
- *Acid mine drainage*
- *Pollutants released from processing plants*
- *Tailings ponds*
- *Underground mines*

An aerial photograph of the River Pra, showing a clear blue section on the left and a muddy brown section on the right, separated by a vertical dashed white line. The river is surrounded by dense green forest.

River Pra

Calamsey

Water pollution

Sediments released through soil erosion cause siltation or the smothering of stream beds. It adversely impacts irrigation, fishing, domestic water supply, and other activities dependent on such water bodies.

High concentrations of toxic chemicals in water bodies pose a survival threat to aquatic flora and fauna and terrestrial species dependent on them for food.

The acidic water released from metal mines or coal mines also drains into surface water or seeps below ground to acidify groundwater.

The loss of normal pH of water as a result of release of acidic water from metal and/or coal into surface/groundwater can have disastrous effects on life sustained by such water.

Habitat destruction/Loss of biodiversity

Extractive activities can cause:

- 1. Loss of species and ecosystems*
- 2. Changes in migration patterns*
- 3. Changes in breeding and feeding habits.*

Often, the worst effects of mining activities are observed after the mining process has ceased.

Habitat destruction/Loss of biodiversity

Mining leads to a massive habitat loss for a diversity of flora and fauna ranging from soil microorganisms to large mammals. (loss of gorilla species in the Guinee Forests - Video)

Endemic species are most severely affected since even the slightest disruptions in their habitat can result in extinction or put them at high risk of being wiped out. Toxins released through mining can wipe out entire populations of sensitive species

The destruction or drastic modification of the pre-mined landscape can have a catastrophic impact on the biodiversity of that area.

(Yasunu National Park, Equador)

Air pollution

A photograph of a desert landscape with many dead, skeletal trees under a hazy, orange sky, suggesting air pollution.

"Environmental pollution is an incurable disease. It can only be prevented."

- Barry Commoner

Air pollution

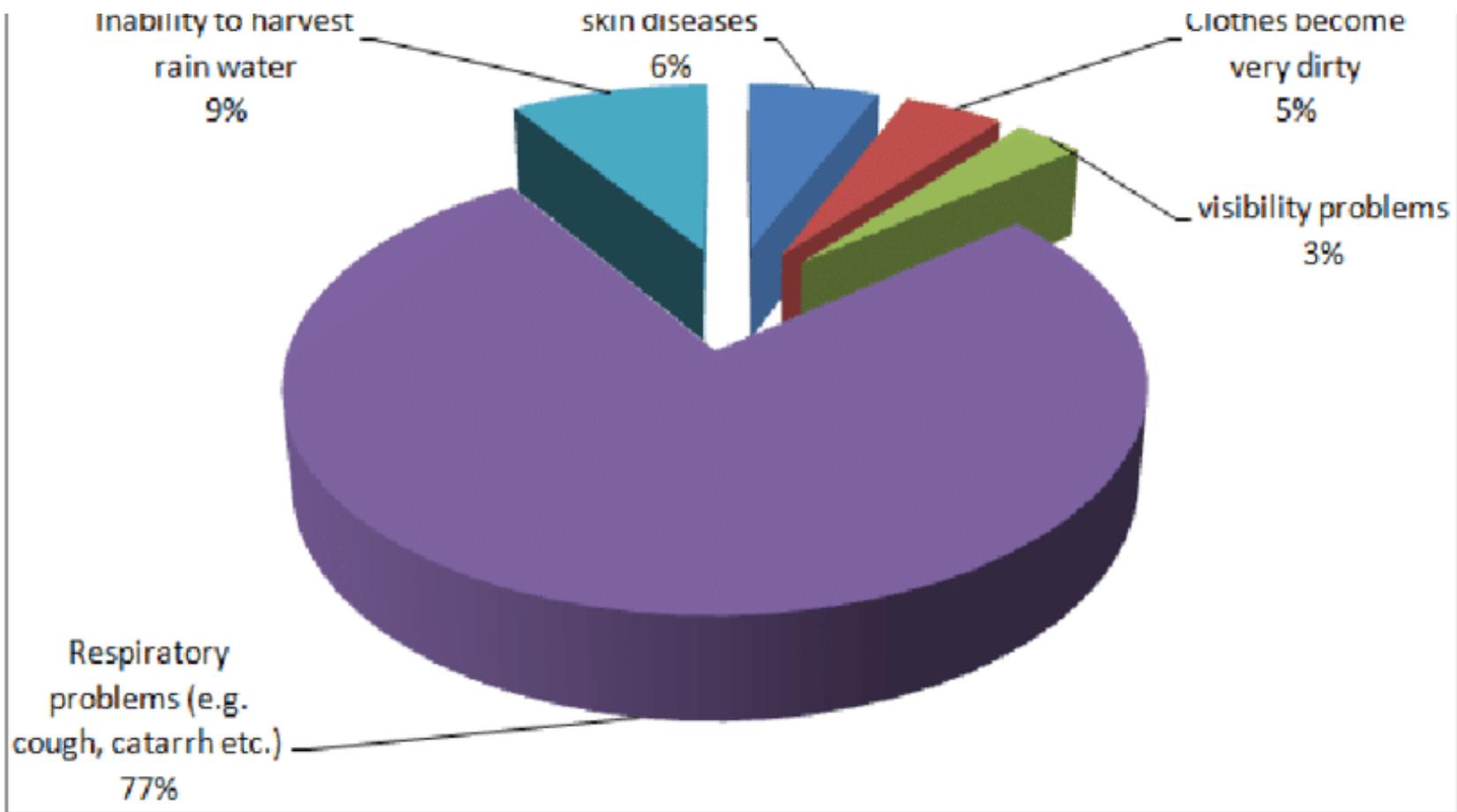
*Air Quality is adversely affected by mining/extraction operations.
These include:*

- 1. Unrefined materials (lead, cadmium etc) are released when mineral deposits are exposed through mining.*
- 2. Extreme smoke from illegal extractive activities (Nigeria)*
- 3. Heavy vehicular movement and unregulated blasting activities*

These pollutants can damage the health of people living near the mining site. Diseases of the respiratory system and allergies can be triggered by the inhalation of such airborne particles.

case example..... Niger Delta





Source: Authors' Survey, 2014

DEFORESTATION/SOIL EROSION/LAND DEGRADATION

What we are doing to the forests of the world is but a mirror reflection of what we are doing to ourselves and to one another.

Mahatma Gandhi

Deforestation/soil erosion/land degradation



Deforestation/soil erosion/land degradation

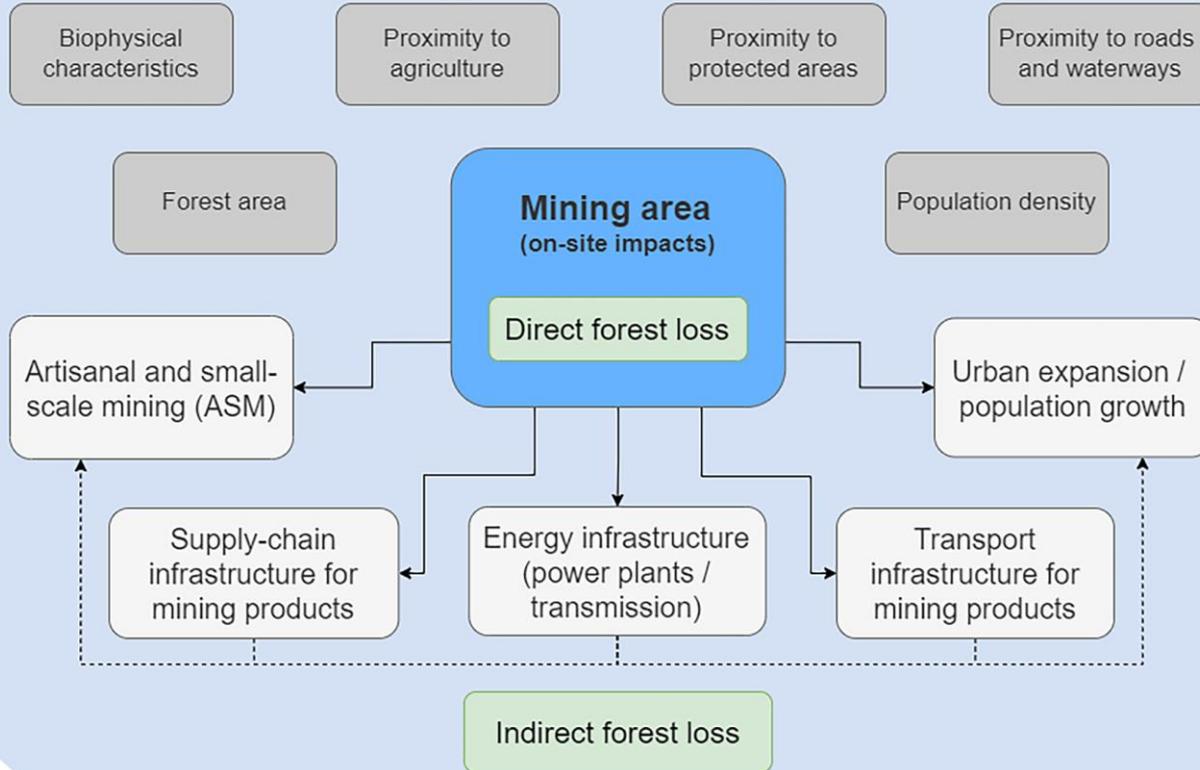
Removal of forests without compensatory activities of reclamation or reforestations has huge impacts on the environment.

- *Habitat Fragmentation*
- *Land exposure (soil erosion)*
- *Alteration in Ecosystem dynamics*
- *Reduction/ loss in carbon storage (Sequestration)*

(case example.....Guinee Bauxite Mining – Forest loss)

50 km surrounding of mining area

(off-site impacts)





Climate change

The production and use of fossil fuels (such as coal, oil, and natural gas) contribute to about half of global greenhouse gas emissions and global warming.

Extraction and metal processing alone however makes up for about 26% of global carbon emissions

Climate change

Effects of the EI sector on climate

Greenhouse gas emissions

The extraction and production of fossil fuels such as Coal, oil and gas, is a major source of greenhouse gas emissions which contribute to climate change.

Methane emissions

Extractive activities such as coal mining and natural gas production can release methane, a potential greenhouse gas into the atmosphere.

Land use changes/deforestation

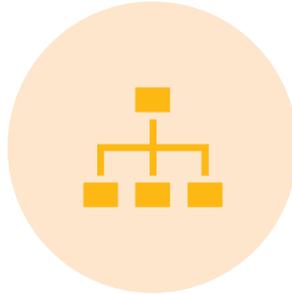
Land use changes can impact the carbon storage/balance of an affected area. Conversion of natural ecosystems into agricultural or settlement areas for instance.

Managing the impact

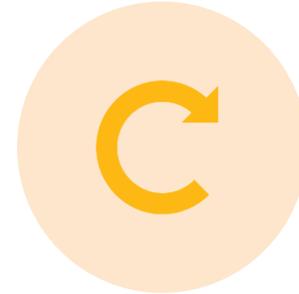
Government intervention



PREVENTION



MANAGEMENT



RESTORATION

Government Interventions

Based on sound environment principles

- Precautionary principle (when there is uncertainty...take action to prevent the doubt)
- User/Polluter pay principle (He who pollutesmust bear the cost of pollution)
- Proportionality principle (measures taken to mitigate an environmental impact should be proportional to the risk posed by those impacts)
- Responsibility principle (everyone is responsible for minimizing environmental impacts – everyone has a role to play in environmental sustainability)

Duty of care – your legal job

Environmental Justice – ensuring you LNOB in env'tal management and resource protection

Environmental stewardship – Taking responsibility for protection of environment

Corporate social responsibility – responsibility to minimize impact of your activities.

Prevention practices

- Sustainable mining practices: companies can implement environmentally-friendly mining practices, such as using renewable energy sources, recycling waste materials, and reducing water usage.
- Environmental impact assessments: companies can conduct environmental impact assessments (EIAs) to identify and mitigate the potential impacts of mining activities on the environment.
- Stakeholder engagement: companies can engage with local communities and stakeholders to understand their concerns and to develop strategies for minimizing environmental impacts.

Management practices

- Water management: companies can implement water management plans to minimize water pollution and ensure that water resources are not depleted.
- Tailings management: the waste material generated by mining (tailings) can be managed in a way that minimizes environmental damage, such as using lined tailings storage facilities.
- Monitoring and reporting: companies can monitor and report on their environmental performance, to demonstrate their commitment to sustainable mining practices.
- Stakeholder engagement: companies can engage with local communities and stakeholders to understand their concerns and to develop strategies for minimizing environmental impacts.

Restoration practices

- Reforestation and land restoration: after mining activities are completed, companies can replant trees and restore the land to its original state.
- Regulation: governments can establish and enforce regulations to ensure that mining companies are held accountable for their environmental impacts.



Group Presentations





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