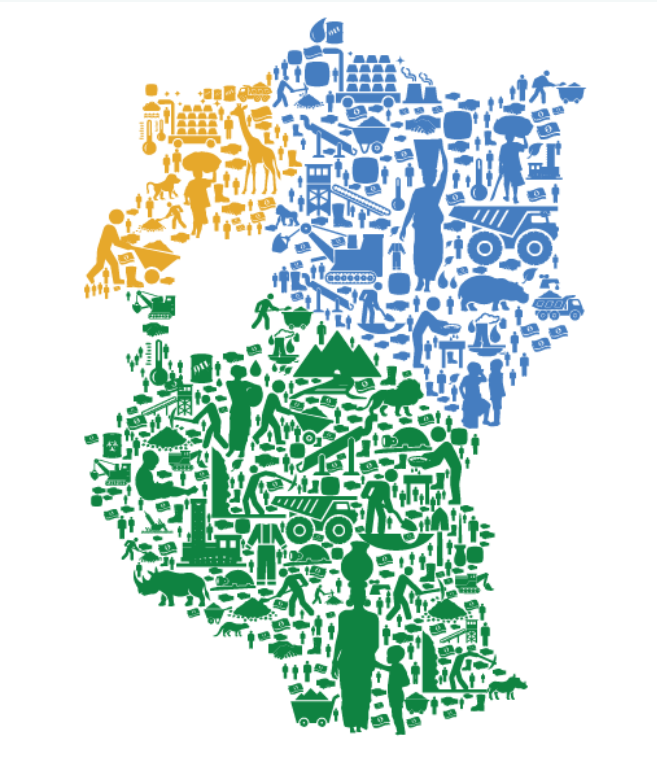


Introduction to Mining, Oil and Gas Industries in Kenya



Supporting Inclusive Resource Development (SIRD) East Africa TRAINING PROGRAM 2019



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Government Objectives vs Company Objectives



The Extractive Sector

- It accounts for at least 20% of total exports, and at least 20% of govt. revenue in 29 low-income and lower-middle-income countries.
- In 8 such countries, the EI sector accounts for more than 90% of total exports and 60% of total govt. revenue (IMF 2012)
- FDI in Africa has risen between 2000 and 2012 from \$ 10 billion to \$ 50 billion (UNCTAD 2013)
- Co.'s make holes in the ground from which they extract oil, gas or minerals to be transported to a processing facility in country or to an export point.
- Extracted commodities are weighed, their quality measured, prices of common commodities are quoted on international exchanges.
- EI sector is dominated by few large companies
- Economic, societal and environmental implications of EI operations pose significant & diverse challenges

Extractive sector contd.

- Co's: exploration and extraction of oil, gas and minerals involve high levels of geological uncertainty, large initial capital investments and long exploration and project development periods.
- EI sector is characterized by high volatility of oil and minerals prices and unpredictability of costs. They generate price and cost risks.
- EI projects generate high risks to the natural environment. Decommissioning projects in some cases, the clean up of contaminated soil or water, can constitute a significant part of total project costs & co.'s would usually have to post collateral to ensure that funding is available to responsibly decommission the project at the end of its operative life.
- If not taken into account early enough, environmental costs could end up as govt. liabilities instead of company expenses.

Extractives Contd.

- Socio-economic circumstances and health of populations living in the vicinity of the EI project should be taken into consideration.
- Co.'s are often required to meet specific commitments through CDA's, community foundations, trusts and funds, to mitigate potentially adverse social and environmental impacts and ensure that a share of benefits accrues to affected populations.
- Govt.'s often have the challenge of an exhaustible, non-renewable natural resource in the determination of optimal extraction rates, designs of fiscal regimes, allocation of resource revenues to investment, consumption and foreign savings.
- Natural resources often raises questions on intergenerational equity and long-term fiscal sustainability.
- The EI sector is also characterized by specialized technology and high capital requirements that generate barriers to entry. There's also specialized intellectual property.

Extractives contd.

- Resource-rich countries should develop adequate institutional capacity to establish and operate efficient contracting, legal and fiscal regimes and to oversee co. operations.
- Small scale artisanal mining may provide livelihoods for low-income families but extensive use of toxic chemicals could result in large liabilities for the govt. if it must pick up the tab for the clean up.
- The EI sector is characterized by exceptional profits and substantial rents

Brief overview of the upstream petroleum sector

The Petroleum Industry is divided into three sectors namely; upstream, midstream and downstream.

The upstream is commonly referred to as the exploration and production (E & P) finds and production of hydrocarbons.

The midstream process stores, markets and transports the hydrocarbons. Here a link is established between producing areas and market places.

The downstream sector includes oil refineries, petrochemical plants, petroleum products, distributors, retail outlets and natural gas distribution companies.



- Petroleum Exploration commenced in the 1950's.
- First well drilled in 1960 & by 1981, 14 wells had been drilled.
- Petroleum Exploration was initially undertaken under the Mining Act, Cap 306, this was through a royalty based licensing system.
- There was no upstream legislation per se at that time. The government sought to increase investment within this sector, thus enacted the Petroleum (Exploration and Production) Act, Cap 308.
- This legislation incentivized companies within the sector, leading towards increased exploration activities.

Over the years there has been a marked interest in the upstream sector, this has largely been attributed to:

1. The attractive legal, regulatory framework, fiscal regime and the acceptable risk-reward balance that exists in Kenya.
2. The discovery of commercial quantities of oil in Northern Kenya, Turkana in the year 2012 by Tullow
3. Discoveries of commercial quantities of both oil and gas in neighboring countries (Uganda and Tanzania).
4. Rising Crude Oil Prices (although recently there has been a downturn in crude prices and this has dis-incentivized investment in the sector).
5. World Demand for both oil & gas.

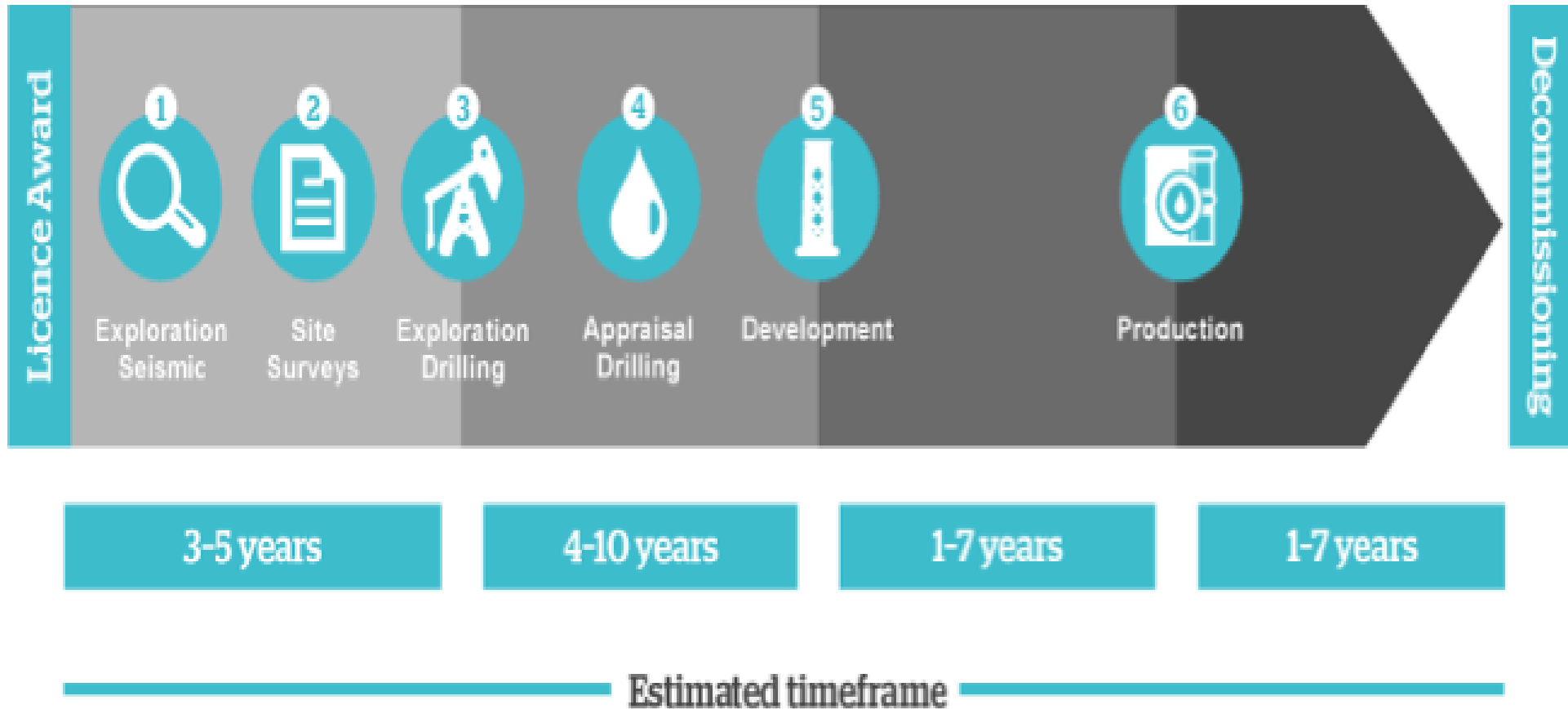


Why is Oil & Gas so important?

This slide shows some of the product that we use in our everyday life and that are the result of refining process which is one of the main stages of the Downstream phase



Life cycle of the upstream petroleum industry.



Licensing



1 to 5 years

Exploration team identifies the best places to explore for oil by carefully studying the geology of the area. In entering a new country we also consider the natural habitat, the local community as well as the political and security environment.

Then we apply for a licence to explore, which is granted by the host government.

Exploration



5 to 10 years

We do a lot of planning before we drill our first well to give ourselves the best chance of long-term success, both in finding oil and in working in harmony with local communities. If we make a discovery, we drill a series of wells to assess the quantity and quality of the oil that we have found.

Developing Discoveries



5 to 10 years

Developing an oil field requires complex decision-making. The starting point is to ensure it is commercially viable. The views of government, local communities and other interested parties are factored. Take into account the social and environmental impacts of the project in the planning and building phases.

Exploration

Aerial surveys
↓
Seismic
↓
Exploration Drilling

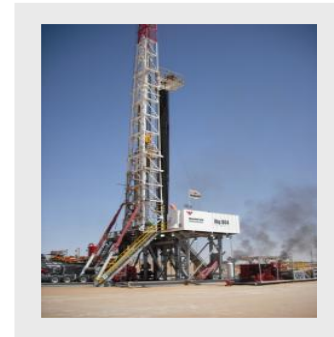


Exploration phase

- Aerial surveys to determine areas of interest
- Detailed seismic surveys to find prospects
- Exploration drilling to test whether prospects contain hydrocarbons

Appraisal

Appraisal Drilling
↓
Well Testing
↓
Infill & 3D Seismic



Appraisal phase

Assess commerciality:

- Additional & more detailed seismic
- Additional wells to determine field size and properties
- Well test to measure flow and reservoir characteristics

Development

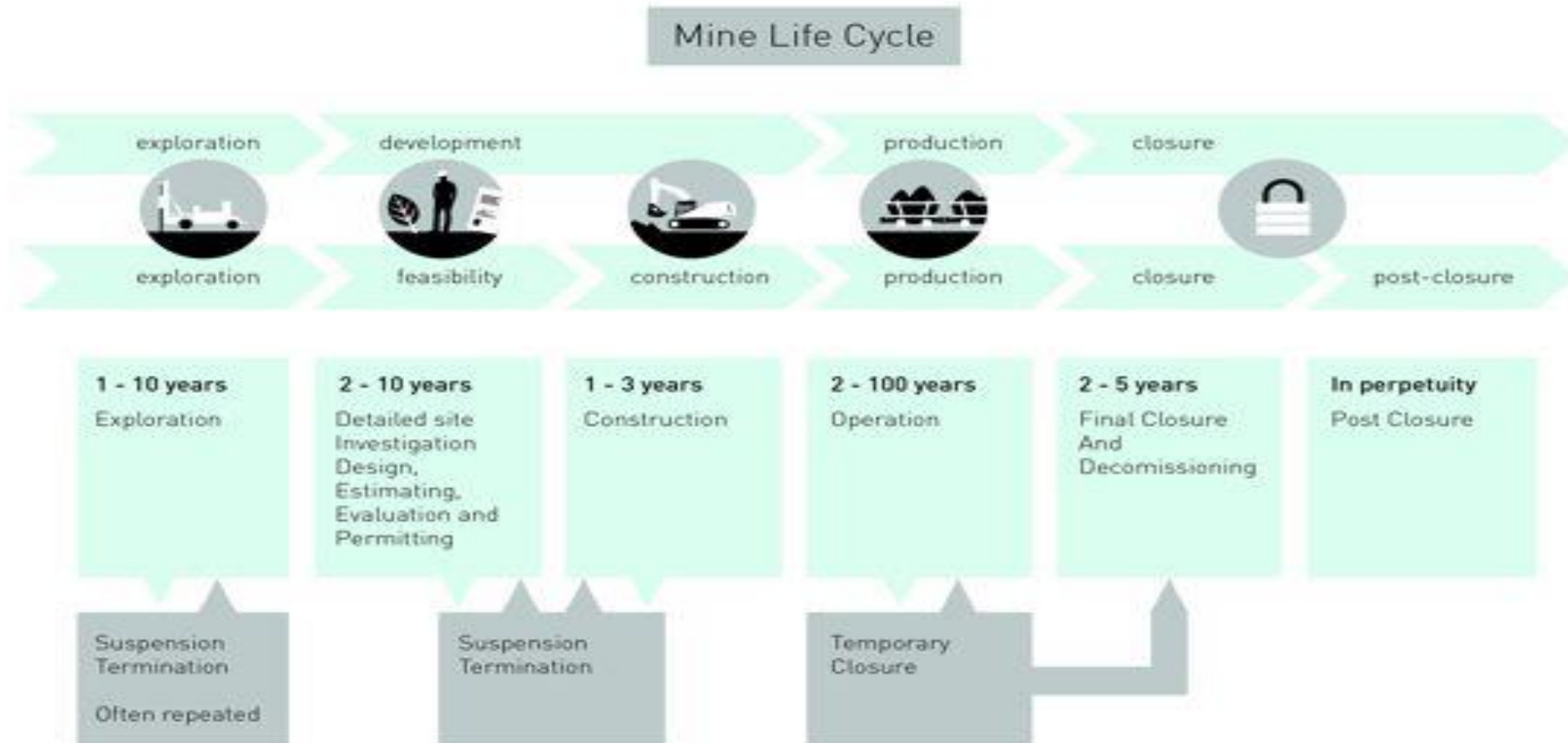
Development Planning
↓
Production



Development phase

- Determine best development option for maximum recovery
- Drill production wells
- Construct processing facilities and pipeline infrastructure
- Produce

Mining on the other hand



After Borealis and ICMM

Mining sector overview

Volatile sector that covers a diverse range of commodities

Commodities here are:

- Precious stones, gold etc.

Sector faces increased challenges

- Volatile commodity prices
- Resource nationalism
- Skills shortages
- Environmental challenges
- Increased capital costs and host government demands including infrastructure development and sharing obligations



Industry overview contd.

Key players

- Mining companies
- Commercial Banks
- Development Banks
- Infrastructure providers
- Citizens
- Govt.
- NGO's

Risks

- Exploration
- Feasibility/technology
- Operational
- Political
- Legal
- Financial
- Environmental



Brief overview of Kenya's mining industry

- Kenya's mining industry existed as far back as 1942, with Africa Diatomite Industries Limited exploited Diatomite in Gilgil.
- Whilst Kenya Fluorspar Company Limited was exploiting Fluorspar for export in the Rift Valley since 1971.
- In Lake Magadi Region, Tata Chemicals has been in operation there, it is now Africa's largest soda ash producers & one of Kenya's leading exporters



NO.	GOVERNMENT	Company
1	Attraction of capital/ Investment for petroleum Exploration & production Activities	Falling Crude Oil prices
2	Lack of Technical Expertise/ Issue of Local Content	Local Content- Hiring for the sake of hiring/ standards or quality of materials not up to par
3	managing Expectations	Managing Expectations
4	Transparency & Accountability (Signature Bonus)	Transparency & Accountability (EITI COMPLIANCE)
5	Inherent weak/outdate legal & fiscal regime: <ul style="list-style-type: none"> • Environmental & Communal rights 	uncertainty in fiscal regime (cgt)