



## TULLOW KENYA EIA DOCUMENTS

### **1. Introduction**

*UNEP* definition: EIA is a tool used to identify the environmental, social and economic impacts of a project prior to decision-making. It aims to predict environmental impacts at an early stage in project planning and design, find ways and means to reduce adverse impacts, shape projects to suit the local environment and present the predictions and options to decision-makers.

### **2. Tullow EIA Requirements**

Tullow Oil has an Environmental and Social Performance Standard that describes requirements in relation to various environmental and social aspects of projects. The Standard sets out the following requirements with regard to Environmental and Social Impact Assessment (ESIA).

Where applicable:

- 1) Complete an ESIA in advance of any activities with the potential to cause material environmental and/or social disturbance (e.g. geophysical surveys, drilling, developments, commissioning, decommissioning, and abandonment).
- 2) When contracting for ESIA services, utilize the Qualification Criteria for ESIA Providers.
- 3) Prepare an Environmental and Social Management Plan (ESMP) to define implementation of specific mitigation actions identified in the ESIA, ENVID and elsewhere.
- 4) Conduct a cross-disciplinary ESIA/ESMP Workshop, including budget holders for project execution, to review and agree all commitments and mitigation measures included within an ESIA and ESMP prior to internal approval and any submittal to government for regulatory approval.
- 5) Consider all mitigation commitments stated within an internally and externally approved ESIA, ESMP and Permit to Operate as binding and incorporate the same into the project design, schedule, budget and plan.
- 6) Monitor, report and record progress towards completion of all mitigation commitments in ESIA's and ESMP's as a regular part of project management.

Further guidance on Tullow's approach to ESIA's is also found within the Tullow Oil Environmental & Social Impact Assessment (ESIA) Guidelines. The guidelines state that ESIA is a mandatory corporate requirement, to be completed prior to all new activities, i.e. seismic, drilling or development programmes (including associated camps, roads and other project infrastructure), or significant modifications to existing projects. In addition, an ESIA should be conducted for the decommissioning or abandonment of developed facilities and incorporate the restoration of all onshore and offshore activities.

### **3. Kenya Environment Assessment Requirements**

In Kenya the *Environmental Management and Coordination Act (EMCA) 1999* and the *Environmental (Impact Assessment and Audit) Regulations, June 2003* define the legal basis for and the requirements of environmental impact assessment and management. *EMCA (1999)* defines environmental impact assessment as a systematic examination conducted to determine whether or not a programme, activity or project will have any adverse impacts on the environment.

The National Environmental Management Authority (NEMA) assumes primary responsibility for overseeing the implementation of the requirements of the Act. Figure 1 illustrates the EIA process. The duration of this process is usually set in the EIA legal framework - usually 45 working days for a



project report and 90 working days for an ESIA study report. Following devolution, County-level NEMA representation was established and a framework for review of projects at County and/or national-levels was established.

The EMCA (1999) and Environmental Regulations (2003) define different requirements for environmental impact assessment based on the sector, nature of the project and its likely environmental impacts. Specifically, a project proponent may be required to implement only an Environment Project Report (EPR) study or both an Environment Project Report (EPR) study and a detailed ESIA, the former being a precursor to the latter.

The Second Schedule of EMCA 1999 lists the projects expected to undergo an EIA. What it does not say is whether specific projects can be submitted as an EPR or full ESIA. Typically the project proponent prepares a EPR for submission to NEMA. Where NEMA is satisfied that the project will have no significant impact on the environment, or that the project report discloses sufficient mitigation measures, NEMA may issue a licence. However if NEMA finds that the project will have a significant impact on the environment, and the project report discloses no sufficient mitigation measures, NEMA shall require that the proponent undertake a full environmental impact assessment study.

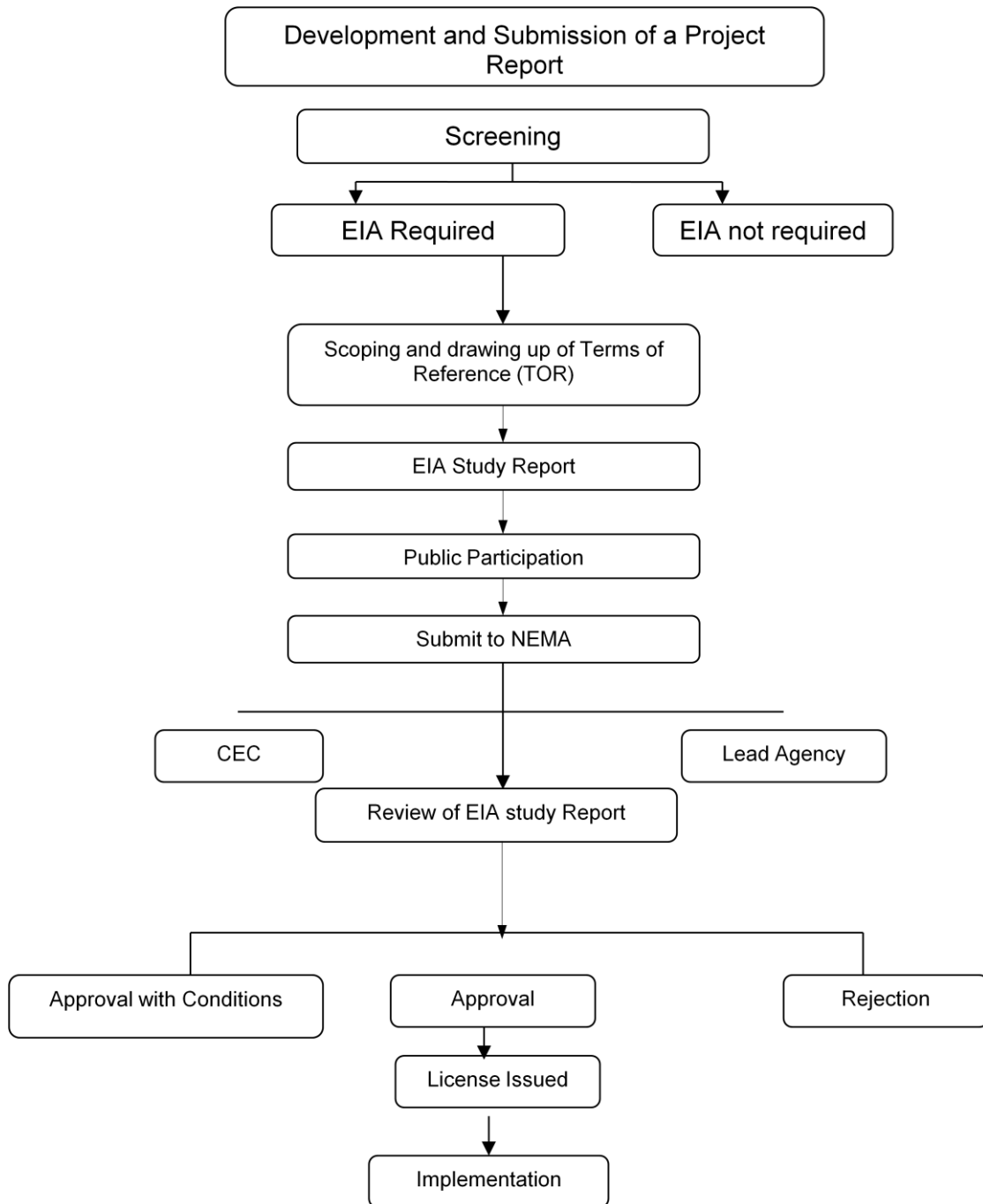
The Environmental (Impact Assessment and Audit) Regulations (2003) define an **Environment Project Report (EPR) Study** as a general scoping study that provides the stakeholders in the project area with the opportunity to receive information regarding the proposed project, participate in the assessment process and raise issues of concern. The EPR Study Report identifies the following: (i) the nature and extent of the proposed project; (ii) potential issues associated with the proposed project, and; (iii) the extent of specialist studies required during the detailed ESIA phase.

Where a detailed ESIA is deemed necessary, the objectives of the ESIA include:

- (i) Provision of an overall assessment of the social and biophysical environment affected by the proposed project
- (ii) Assessment of potentially significant impacts associated with the proposed project
- (iii) Identification and recommendation of appropriate mitigation measures for potentially significant environmental and social impacts
- (iv) Undertaking a fully inclusive public/stakeholder consultation process to ensure that the affected community is engaged throughout the ESIA process and their issues and concerns addressed.
- (v) Developing an Environmental Management Plan necessary to minimize, mitigate any potential environmental impacts identified by the ESIA.
- (vi) Preparation of an ESIA Study report in accordance with the requirements of the Environment (Impact Assessment and Audit) Regulations, 2003.

After the report is submitted to NEMA, copies are sent to the relevant Lead Agencies for review. A Technical Committee then sits to review the report and either (i) issues an Environmental Impact Assessment License; (ii) declines to issue the license with reasons, or; (iii) requests for more information or wider consultation.

Figure 1. EIA process in Kenya



#### 4. EIA Requirements During the Oil and Gas Life Cycle

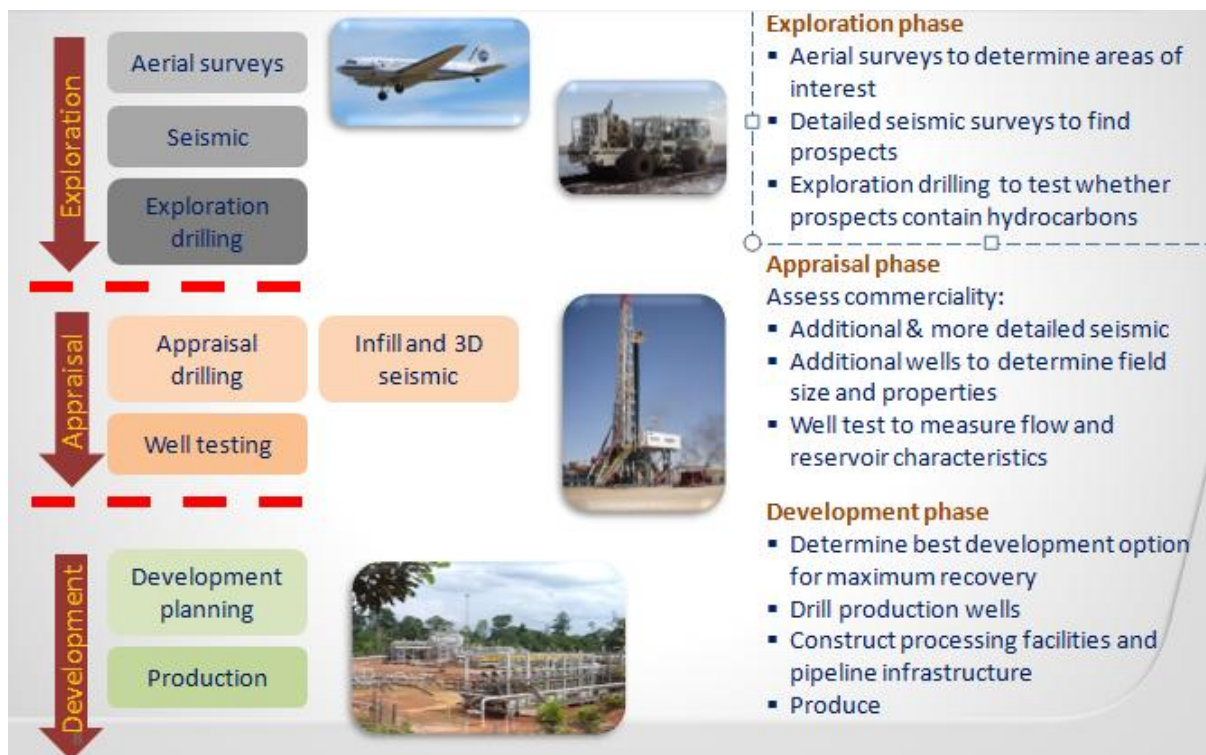
Figure 2 provides an illustration of the oil and gas life cycle. Environmental impact assessment is relevant to the following phases/activities of the oil and gas life cycle:

- Exploration and appraisal
  - Seismic
  - Exploration drilling
  
- Development

During exploration and appraisal, the Company undertakes activities to identify if oil resources exist. The two main activities are seismic and exploration drilling. Key features of these activities include: (i) the inability to define specific locations of project activities within the exploration block, and; (ii) their short-term temporal nature – seismic programs are typically completed in 3 months and exploration drilling (inclusive of civils work to develop well pads) may take between 60-120 days.

Development only occurs once commercial oil resources have been identified and the Company and Government agree to develop the resource. As part of this process a Field Development Plan (FDP) is developed and the project footprint and nature of construction and operations is defined.

Figure 2. Oil and Gas Life Cycle



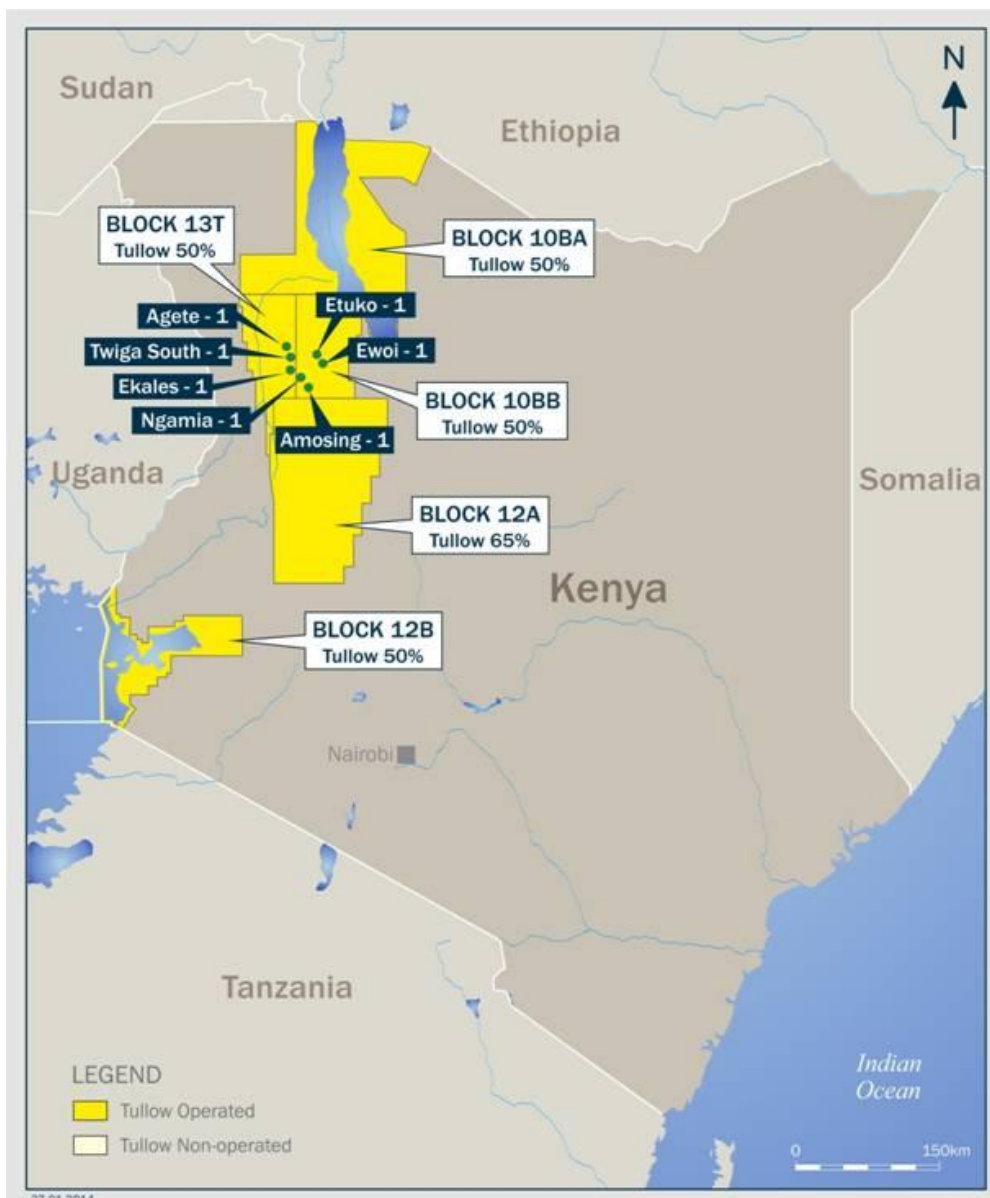
In relation to the nascent oil and gas industry in Kenya NEMA has defined environmental impact assessment requirements for various phases of the oil and gas life cycle. Specifically, NEMA has required:

- Exploration phase activities including seismic and drilling: During this phase Project Proponents will be required to develop and submit a block-wide Environmental Project Report Study in support of their proposed activities
- Development: Project proponents will be required to develop a full ESIA

### 5. Tullow Kenya Environment Impact Assessment

Figure 3 provides of map of the blocks that Tullow Kenya currently operates. Note that from 2011-2013 Tullow Kenya was the operator of Block 10A. Following completion of seismic and drilling of a single exploration well Tullow Kenya relinquished the block back to the Government of Kenya.

Figure 3. Map of Current Tullow Kenya Blocks





In accordance with NEMA requirements a block-wide Environmental Project Report Study was developed for all exploration phase seismic and drilling operations/activities and NEMA EIA licences were issued on the basis of these reports. Table 1 provides a summary of all completed and submitted Environmental Project Report studies. Tullow Kenya has carried out 14 EPR studies to date for operations in Block 10A, 13T, 10BA and 10BB. Copies of the EIA Project Report Studies can be found at the NEMA headquarters in Nairobi and a copy should be held at the respective County NEMA office.

Beyond submission of a block-wide Environmental Project Report study, Tullow Kenya has defined internal site-specific assessment (SSA) procedures which aim to address location-specific environmental and social impacts. The SSA procedure is an internal Tullow risk management and assessment process that is designed to support project planning and supplement the statutory ESIA process. The SSA process involves participation of a cross-functional multi-disciplinary team including both internal functions (Civil Eng., Environment, Security and Social Performance including stakeholder engagement and lands) and external stakeholders (community representatives, Kenya Wildlife Service (KWS), National Museums of Kenya and Turkana Basin Institute (TBI).

The Site Specific Assessment (SSA) verifies the existence of dwellings, livestock enclosures, graves, archaeological remains and other cultural heritage, extent and type of vegetative cover, river channels, etc. The SSA findings are used to identify the environmental and social impacts are associated with developing the proposed site and where appropriate drive discussions regarding options to move the proposed location to proximate locations so as to avoid or minimise potential impacts.

The output of the SSA includes: (i) inventory of Project Affected Persons (PAP); (ii) assessment of biodiversity and the significance of that biodiversity; (iii) identification of key wildlife breeding seasons and locations (where they exist), and; (iv) known archaeology and cultural heritage. These site characteristics are – including built environment, assets, crops, land-user and/or land-owner, bird breeding locations, designated sites, known archaeology and cultural features, etc. – are mapped. Together these outputs inform the development of a project specific Environmental and Social Management Plan (ESMP) to compliment the Block wide ESIA ESMP.



No	Block	Year	Activity	Document Name	Document Reference	Consultant	Owner
1	10A	2008	2D Seismic	Project report for environmental impact assessment of the proposed oil and gas exploration in block 10A, northern Kenya for Lundin Kenya b.v.	NEMA PR 5272 / 0000083	EarthView GeoConsultants	Lundin
2	10A	2011	Drilling	Environmental Impact Assessment Project report for proposed exploratory oil and natural gas well drilling programme in block 10A: parts of Marsabit North (Chalbi) and Loyangalani districts by Tullow Kenya b.v.	NEMA PR 8941 / 0009576	EarthView GeoConsultants	Tullow
3	10A	2012	Airstrip	Environmental Impact Assessment Project Report of the proposed aerodrome near Paipai basecamp, Block 10a, Marsabit North district	NEMA PR 5/2/10,113	EarthView GeoConsultants	Tullow
4	10BA	2011	2D Seismic	Environmental Impact Assessment Project Report for the proposed oil and gas seismic survey project in Block 10BA: Turkana Central, Turkana North, Loyangalani and North Horr districts by Tullow Kenya b.v.	NEMA PR 8734 / 0009539	EarthView GeoConsultants	Tullow



5	10BA	2014	Drilling	Environmental and Social Impact Assessment Project Report the proposed exploratory oil well drilling in Block 10BA, Turkana Central and North districts by Tullow September 2013 for Kenya b.v.	NEMA PR 5/2/11,970	EarthView GeoConsultants & RSK	Tullow
6	10BB	2009	2D Seismic	Environmental Impact Assessment Project Report for proposed exploratory oil and natural gas well drilling programme in Block 10BB: Turkana South and Turkana Central	NEMA PR 4550 / 0000094	EarthView GeoConsultants	Turkana Drilling Consortium (K) Ltd
7	10BB	2013	3D Seismic	Environmental Impact Assessment Project Report for the proposed 3D seismic survey in Block 10BB by Tullow Kenya b.v.	NEMA PR / 10,683	EarthView GeoConsultants	Tullow
8	10BB	2011	Drilling	Environmental Impact Assessment Project Report of the proposed exploratory well drilling in Block 10BB, Turkana South and Turkana Central districts by Africa oil Kenya b.v.	NEMA PR 7764 / 0008076	EarthView GeoConsultants	Africa Oil
9	10BB	2015	Amosing EWT	Extended well testing – Amosing 1 Environment Project Report Study	NEMA PR /5/2/13,972	Kurrent Technologies	Tullow





10	10BB	2015	Ngamia EWT	Extended well testing – Ngamia D Environment Project Report study	NEMA/EIA/PSR/4070	Kurrent Technologies	Tullow
11	13T	2011	2D Seismic	Environmental Impact Assessment Project Report for proposed oil and gas seismic project in Block 13T: parts of Central Pokot, Loima, Turkana Ccentral, and Tturkana Ssouth districts by Tullow Kenya b.v.	NEMA PR 8896 / 0009552	EarthView GeoConsultants	Tullow
12	13T	2013	3D Seismic	Environmental Impact Assessment Project Report for proposed 3D seismic survey for Block 13T: parts of Central Pokot, Loima, Turkana Central, and Turkana South districts by Tullow Kenya b.v.	NEMA PR 10,684 / 0016855	EarthView GeoConsultants	Tullow
13	13T	2012	Drilling	Environmental Impact Assessment Project Report for proposed exploratory oil and natural gas wells drilling programme in Block 13T, Turkana county, Kenya, by Tullow Kenya b.v.	NEMA PR 10,351 / 0014356	EarthView GeoConsultants	Tullow
14	13T	2015	Kapese ISB	Environmental and Social Impact Assessment Project Report for the proposed Kapese integrated support base in Lokichar, Turkana county	NEMA/EIA/PSL/1856	Kurrent Technologies	Tullow



15	12A	2011	2D Seismic	Environmental and Social Impact Assessment Project Report for proposed oil and gas seismic project in Block 12A: parts of Turkana East, East Pokot, Marakwet West, Baringo Ventral, Marigat, Keiyo South, Baringo North, Mogotio and Samburu districts by Tullow Kenya b.v.	NEMA PR 9044 / 0010777	EarthView GeoConsultants	Tullow
16	12A	2015	Drilling	Environmental and Social Impact Assessment (ESIA) for proposed exploration drilling in Block 12A, onshore of Kenya	NEMA PR 5/2/13,227	ESF Consultants	Tullow
17	12B	2013	2D Seismic	Environmental and Social Impact Assessment Project Report for the proposed 2D seismic survey in block 12B by Tullow Kenya b.v.	NEMA PR 10,747 / 0016716	EarthView GeoConsultants	Tullow