Delivering Kenya’s Crude:
Through People to Market

KCSPOG Working Paper, October 2018
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Land, Environment & Economic Analysis
of the
Lokichar - Lamu Heated Crude Oil Pipeline
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</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
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<tr>
<td>CSO</td>
<td>Civil Society Organizations</td>
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<tr>
<td>CED</td>
<td>Centre for the Environment and Development</td>
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<tr>
<td>COTCO</td>
<td>Cameroon Oil Transportation Company</td>
</tr>
<tr>
<td>EMCA, 1999</td>
<td>Environment Management and Coordination Act, 1999</td>
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<tr>
<td>EIA</td>
<td>Environmental Impact Assessment</td>
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<tr>
<td>EIA Regulation</td>
<td>Environmental (Impact Assessment and Audit) Regulations, 2003</td>
</tr>
<tr>
<td>FEED</td>
<td>Front-End Engineering Design</td>
</tr>
<tr>
<td>JDA</td>
<td>Joint Development Agreement</td>
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<tr>
<td>IEIA</td>
<td>Integrated Environmental Impact Assessment</td>
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<td>IFC</td>
<td>International Finance Corporation</td>
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<tr>
<td>KCSPOG</td>
<td>Kenya Civil Society Platform on Oil &amp; Gas</td>
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<tr>
<td>KJV</td>
<td>Kenya Joint Venture</td>
</tr>
<tr>
<td>LAPSSET</td>
<td>Lamu Port, South Sudan, Ethiopia Transport Corridor</td>
</tr>
<tr>
<td>LCDA</td>
<td>LAPSSET Corridor Development Authority</td>
</tr>
<tr>
<td>NEMA</td>
<td>National Environment Management Agency</td>
</tr>
<tr>
<td>NLC</td>
<td>National Land Commission</td>
</tr>
<tr>
<td>PSB</td>
<td>Pipeline Steering Board</td>
</tr>
<tr>
<td>RELUFA</td>
<td>Réseau de Lutte contre la Faim</td>
</tr>
<tr>
<td>SEA</td>
<td>Strategic Environmental Assessment</td>
</tr>
<tr>
<td>SESA</td>
<td>Strategic Environmental and Social Assessment</td>
</tr>
<tr>
<td>TAC</td>
<td>Technical Advisory Committee</td>
</tr>
<tr>
<td>ToR</td>
<td>Terms of Reference</td>
</tr>
<tr>
<td>TOTCO</td>
<td>Tchad Oil Transportation Company</td>
</tr>
</tbody>
</table>
Acknowledgments and More Information

We launch this paper as a working paper, and we welcome your feedback on the analysis put forward in this paper. For any comments and suggestions, please contact:

Kenya Civil Society Platform on Oil and Gas info@kcspog.org

We would like to express gratitude to the analytical team and peer reviewers. Special thanks to Bill Powers and Samuel Nguiffo for their input towards the development of this paper specifically the case studies from Peru and Cameroon respectively. We also acknowledge the tireless effort of the KCSPOG secretariat and members in drafting, review and input into this project. We specifically extend our gratitude to Charles Wanguhu, Angela Mutsotso and Gilbert Makore. We also acknowledge the Ford Foundation generous support towards the development of this paper.
Delivering Kenya’s Crude: Through People to Market
1.0 Context

This paper is divided into two main parts—the first section discusses the legal issues around the pipeline with an emphasis on the land acquisition and environmental management issues around the heated crude oil pipeline. The second section discusses the economics of the pipeline with the aid of models that project the profitability of the pipeline. At the end of the paper are recommendations based on the paper generally and the risks identified—these serve as proposed guidelines for parties involved and as discussion pointers.

Background

In July 2016, the Kenya Joint Venture Partners including Tullow Oil, Maersk Oil and Africa Oil signed a Memorandum of Understanding (MoU) with the Government of Kenya to develop a crude oil pipeline from South Lokichar to the port of Lamu. In October 2017, the Joint Venture Partners signed a Joint Development Study Agreement with the Government of Kenya, to initiate a study for the proposed 892km crude oil pipeline. This development agreement will provide the basis for a series of follow-on studies to be commissioned. The Front End Engineering and Design (FEED) will provide detailed estimates on pipeline capital and operating costs. A tender was first launched in May 2016. The contract for the preparation of the FEED was then granted to the Wood Group from the UK. The work is expected to be completed by late 2018. Other studies to be commissioned include the Environmental and Social Impact Assessment, and options for pipeline financing and ownership structure.

In 2017, the Kenya Civil Society Platform on Oil & Gas (KCSPOG) set out to undertake a three-part piece on the proposed Lokichar-Lamu heated crude oil pipeline. The report is a starting point for discussion by communities and Civil Society Organisations (CSOs) on the proposed pipeline—its challenges. The aim is to raise awareness and create a body of knowledge on the issues likely to affect communities living along the pipeline route including land acquisition/compensation issues and economic implications amongst others. The three-part piece is organized as follows:

i. A Documentary, “Pipeline Voices”: The documentary was shot in Turkana, Samburu, Garissa and Lamu Counties capturing community knowledge, expectations and fears on the pipeline.

ii. Legal Analysis: The analysis highlights the legal framework and speaks to the land and environment issues around the Crude Oil Pipeline.

iii. Economic Analysis: This analysis provides an integrated economic analysis of the project. It analyzes the minimum required per barrel tariff that the pipeline company will charge the upstream project for moving oil from the Turkana fields to the coast.

The Beginning

Upon discovery of commercial crude oil deposits in Kenya’s Turkana County and Uganda’s Hoima District in 2012 and 2006 respectively, the East African Nations began discussions on building a joint heated crude oil pipeline. The Crude Oil Pipeline was to originate from western Uganda through the northwest of Kenya and terminate on the Kenyan coast at the port of Lamu. A bilateral agreement was signed by the Presidents of Kenya and Uganda in August 2015.

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However, newspaper reports in 2013 indicated that Uganda and the oil companies had expressed security concerns over the Northern Kenya LAPSET route with some indications of a preference for the southern route in Kenya exiting in Mombasa where an existing pipeline existed. The Kenyan government maintained that the crude oil pipeline should be integrated within its proposed LAPSET Corridor Development Authority (LAPSSET) corridor. There were also concerns on the proposed tariff fee. In 2014 Toyota Tshutsho was commissioned to carry out a feasibility study on the Ksh 350 Billion Hoima-Lokichar- Lamu pipeline route.

CRUDE PIPELINE ALTERNATIVES

During the 13th Summit of the Northern Corridor Integration Projects in 2016 President Museveni announced that Uganda will build a pipeline with Tanzania and not with Kenya in response the President Uhuru Kenyatta committed to building a Kenyan Crude Oil Pipeline from Lokichar to Lamu.  

1.1 The LAPSSET Connection

In 1972, the LAPSSET Corridor Project was conceived by the Government of Kenya but was unable to take off due to financial constraints. In 2009, the Government of Kenya under the former president His Excellency Mwai Kibaki revived its efforts towards completing LAPSSET by promising to set aside annual budgetary allocations to fund the $16 Billion budget. President Kibaki in March 2013, established the LAPSSET Corridor Development Authority (LCDA) through a Presidential Order to plan, coordinate and manage the project.

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2 Recommendation D in the Joint Communique on the 13th Summit of the Northern Corridor Integration Projects “On Crude Oil the Summit agreed that two crude oil pipelines one from Lokichar to Lamu and another from Hoima to Tanga, will be developed by Kenya and Uganda respectively.”


The LAPSSET Corridor comprises of two core elements: a 500-meter-wide Infrastructure Corridor (accommodating a Highway, SGR Railway, Oil Pipeline utilities (water and power transmission lines), and a 50-Kilometer-wide Economic Corridor spanning either sides of the infrastructure corridor where industrial investments will be situated. The heated crude oil pipeline shall be within the 500-meter-wide infrastructural corridor.

1.2 The Kenya Joint Venture

In 2017, the Kenya Joint Venture partners (the Government of Kenya, Africa Oil, Tullow Oil, and Maersk) signed a Joint Development Agreement (JDA) for the pipeline.

The JDA is important for two reasons- first it sets up a Pipeline Steering Board (PSB) which meets quarterly and makes decisions concerning the pipeline project. The PSB makes strategic and technical decisions. The second reason is that it lays out the legal framework that will govern the pipeline including the Front-End Engineering Design (FEED), Environmental and Social Impact Assessment (ESIA) and studies of pipeline Financing and Ownership.

The table below lists key milestones to be completed before construction of the pipeline:

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Details</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joint Development Agreement (JDA):</td>
<td>Signed in 2017 between the Government of Kenya, Africa Oil and Total (bought out Maersk Oil), To run between 2017 and 2021</td>
<td>2017 (Signed)</td>
</tr>
<tr>
<td>Front End Engineering Design (FEED):</td>
<td>Contract awarded to Wood Group Plc (Registered in the United Kingdom) in May 2018. FEED</td>
<td>30th June 2019</td>
</tr>
</tbody>
</table>

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6 Strategic Environmental Assessment for the LAPSSET Infrastructural Corridor paragraph 2.3.1 (page 18), https://www.nema.go.ke/images/Docs/SEA%20Reports/SEA-037%20LAPSSET%20Corridor%20Authority%20Development%20Report.pdf

7 Map Courtesy of Media Max

8 As of October 2018, the Joint Development Agreement signed in 2017 was yet to be publicly disclosed


10 Information on Timelines obtained from the Ministry of Petroleum and Mining’s Website http://www.petroleumandmining.go.ke/petroleum/
<table>
<thead>
<tr>
<th>Aspect</th>
<th>Details</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Acquisition</td>
<td>LCDA makes a request to NLC to acquire land for LAPSSET.</td>
<td>Completed</td>
</tr>
<tr>
<td></td>
<td>NLC land acquisition process in partnership with County Governments and communities.</td>
<td>Ongoing as of October 2018</td>
</tr>
<tr>
<td></td>
<td>NLC hands over land to LCDA and LCDA enters into a commercial agreement with JDA partners.</td>
<td>2019</td>
</tr>
<tr>
<td>Environmental and Social Impact Assessments</td>
<td>SEA: The LAPSSET SEA was concluded in 2016 and submitted to the National Environment Management Authority (NEMA). It was later approved in 2017</td>
<td>2017 Approved</td>
</tr>
<tr>
<td></td>
<td>ESIA: In June 2018 LAPSSET and KJV’s ESIA Consultants invited stakeholders for scoping stakeholder workshops. As of October 2018, scoping was completed and ToRs for the ESIA were approved by NEMA. Baseline studies commenced in May 2018 and will continue until early 2019 to provide representative data for dry and rainy seasons</td>
<td>30th June 2019 (Submission to NEMA)</td>
</tr>
<tr>
<td>Final Investment Decision</td>
<td>Once the JDA partners complete the necessary design and technical studies (including ESIA) and financial and economic assessments have been finalized. The “Final Investment Decision” (FID) will be taken. Once FID is successfully passed construction begins.</td>
<td>2019</td>
</tr>
<tr>
<td>First Oil</td>
<td>Official launch of the pipeline</td>
<td>2021</td>
</tr>
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</table>
## 2.0 Legal Framework

The development of the pipeline will require compliance with various pieces of legislation including the Constitution, the environmental laws and the land laws. The specific legal provisions are below:

<table>
<thead>
<tr>
<th>Law</th>
<th>Explanation</th>
<th>Quotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constitution of Kenya, 2010</td>
<td><strong>Article 63</strong> of the Constitution defines community land and provides for legislation to be enacted by Parliament on Community Land.</td>
<td>Article 63 (1) identifies community land as: (a) land lawfully registered in the name of group representatives under the provisions of any law; (b) land lawfully transferred to a specific community by any process of law; (c) any other land declared to be community land by an Act of Parliament; and (d) land that is lawfully held, managed or used by specific communities as community forests, grazing areas or shrines; (e) ancestral lands and lands traditionally occupied by hunter-gatherer communities; or (f) land that is lawfully held as trust land by the county governments.</td>
</tr>
<tr>
<td></td>
<td><strong>Article 35</strong> of the Constitution guarantees the right to access information held by the state or by another person that is required for the exercise or protection of any right or fundamental freedom.</td>
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</tr>
<tr>
<td></td>
<td><strong>Article 42</strong> of the Constitution guarantees every person the right to a clean and healthy environment which includes protection of the environment for future generations.</td>
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</tr>
<tr>
<td>Access to Information Act, 2016</td>
<td>The Access to Information Act provides a framework for disclosure of information by Public and Private entities. The Act sets out the responsibilities of information holders and the way disclosure should be made (within 21 days). The Act further states the limitation of the right to access information.</td>
<td>Community Land Act, 2016 (the &quot;CLA&quot;). CLA defines a community to be; &quot;a consciously distinct and organized group of users of the community land who are citizens of Kenya and share any of the following attributes – (a) a common ancestry; (b) similar culture or unique mode of livelihood; (c) socio-economic or other similar common interest; (d) geographical space; (e) ecological space; or (f) ethnicity.&quot;</td>
</tr>
<tr>
<td>Community Land Act, 2016 &amp; Community Land Regulations of 2017</td>
<td>The Community Land Act, 2016 provides for the recognition, protection and registration of community land rights, the management and administration of community land and to provide for the role of county governments in relation to unregistered community land. For a community to be able to own community land, it must qualify as a community and be registered.</td>
<td>The Community Land Act, 2016 provides for the recognition, protection and registration of community land rights, the management and administration of community land and to provide for the role of county governments in relation to unregistered community land. For a community to be able to own community land, it must qualify as a community and be registered.</td>
</tr>
<tr>
<td>Environment Management and Coordination Act, 1999 (EMCA)</td>
<td>EMCA is the primary environmental law in Kenya- it establishes the National Environment Management Agency (NEMA), identifies environmental significant areas and sets out the procedure for decision making. Of interest to the Crude Oil Pipeline is The Strategic Environmental and Social Impact Assessment (SESA) and The Integrated Environmental and Social Impact Assessment (IESIA).</td>
<td>EMCA is the primary environmental law in Kenya- it establishes the National Environment Management Agency (NEMA), identifies environmental significant areas and sets out the procedure for decision making. Of interest to the Crude Oil Pipeline is The Strategic Environmental and Social Impact Assessment (SESA) and The Integrated Environmental and Social Impact Assessment (IESIA).</td>
</tr>
<tr>
<td>The Land Act, No. 6 of 2012 (the “Land Act”):</td>
<td>The Land Act makes substantive provisions for the administration and management of land in accordance with the principles of land management in the Constitution. The Land Act governs; public land, community land and private land.</td>
<td>The Land Act further provides that any land may be converted from one category to another in accordance with the provisions of the Land Act. The type of conversions envisaged under the Land Act are in respect of: Public Land to private land; Public land to community land; Private land to public land; Community land to private land; Community land to public land. The conversion of any land into community land under the existing laws may be by way of: transfer; surrender; operation of the law in relation to illegally acquired community land; or operation of any other written law.</td>
</tr>
</tbody>
</table>

11 See section 2 of the CLA.  
12 Section 9 of the Land Act 2012
The Land Registration Act is the procedural law that governs the various dispositions affecting land, including transfers, leases, charges, transmissions and trusts. The Act provides for the revision, consolidation and rationalization of the law governing the registration of title to land, regulation of dealings in registered land and to give effect to the principles and objects of devolved government in land registration.

This Act gives effect to the objects and principles of devolved government in land management and administration and provides for a linkage between the Commission, county governments and other institutions dealing with land and land related resources. The purpose of the Act was largely to regulate the administration and management of public land in the country through the establishment of a Commission that would act as a watchdog to ensure that public land is not irregularly allocated to private owners. For this reason, many of the provisions in the Act relate to public land.

2.1 Land Acquisition: Compensation, Resettlement & International Finance Corporation (IFC) Performance Standards

This section of the report gives an overview of the compulsory acquisition process in Kenya, provides updates on the land acquisition process for LAPSSET as of October 2018 and examines the IFCs requirements for the acquisition and resettlement process. The Lamu-Lokichar pipeline will be within the LAPSSET Corridor (the pipeline will not take up any additional land aside from the 500-meter-wide LAPSSET Corridor), thus construction will only begin once the land for the LAPSSET Corridor is acquired. LCDA will acquire land through the National Land Commission and the Ministry of Lands and Physical Planning for the infrastructure corridor. Once the land is acquired LAPSSET Corridor Authority will enter into a commercial agreement with the Kenya Joint Venture to provide access to the selected and permitted pipeline corridor.

As of August 2018, the Kenya Joint Venture (Africa Oil, Tullow Kenya BV, Total and the Government of Kenya) as of August 2018 were waiting on LCDA to acquire the land before they sign a commercial agreement thereafter begin construction of the pipeline. As of October 2018, the JDA Partners were completing the necessary design and technical studies (including ESIA). Once those have been completed, and financial and economic assessments have been finalized, the JDA Partners will then take a “Final Investment Decision” (FID). If FID is successfully passed, then the necessary decisions and plans will be made to commence pipeline construction.

Compulsory Acquisition

KCSPOG’s 2018 documentary, “Pipeline Voices,” highlighted the knowledge, fears and expectations of communities living along the route of the proposed pipeline. From the documentary, it is evident that most community members do not hold the title deeds to their land. The lack of title deeds makes it as a key source of anxiety for communities and it is unclear whether they shall be relocated or offered compensation. Additionally, the issue is further complicated by pastoralists living along the corridor and how to acquire access while not impacting livelihoods. Mr. Peter Njoroge a resident of Hindi in Lamu County stated that he was informed by NLC officials that the land on which he has lived on for 30 years is in fact deemed public land and he fears will not be compensated. The NLC officials informed him that the land he lives on is part of the Lamu- Garissa Road thus is within the LAPSSET infrastructural corridor and he will eventually have to move. Ms. Jumwa from Lamu further reiterated Peter’s concerns over compensation and resettlement.

To ensure that the LAPSSET project brings development to the nation but also local communities who often are marginalized, a delicate balance must be struck and people who have dwelt on land in good faith for generations should be compensated and provided adequate support to ensure that their livelihoods are not adversely impacted.

Land Regimes in Kenya

Article 40 (3) of the Constitution of Kenya, 2010 allows for compulsory acquisition for a public purpose or in the public interest. Compulsory Acquisition can only occur when there is prompt payment in full or just compensation to the affected persons. The law allows for either cash payment or just compensation which allows for payment of money and resettlement of affected persons.
Additionally, for those residing on public land in good faith, such as Mr. Njoroge and Ms. Jumwa from Lamu County, Article 40 (4) protects their rights and requires that they be compensated. Chapter 5 of the Constitution of Kenya, 2010 recognizes 3 classes of land; public, private and community land.

i. **Public Land**: belongs to the people of Kenya and is held in trust by the National and County Governments (Article 62). Most public land is what was formerly government land.

ii. **Community Land**: consists of land vested in and held by communities identified based on ethnicity, culture or similar community of interest (Article 63). The Community Land Act, 2016 lays the legal framework for community titles. As of October 2018, there have been no community land title deeds issued to our knowledge, as the CLA’s Regulations have been gazetted but are yet to be authorized to take effect by Parliament.

iii. **Private Land**: this is land held by legal persons aside from any arm of government (Article 64). A title deed signifies the ownership of private land. It is on the basis of a title deed that a land owner is compensated during compulsory acquisition of their land.

**Note on Community Land and Untitled Land**

While the Constitution of Kenya recognizes 3 classes of land including community land, the process of obtaining compensation for community land is still ambiguous as there is no legal framework in place. In practice one must hold a title deed to prove ownership, however in the counties that the pipeline will traverse very few communities hold title deeds to their land but are still considered owners as they are either living on community land or have resided on their land in good faith. This hurdle is faced by mining companies in Kenya and the previous practice is that affected persons are paid a certain sum for the installments on their land (including crops, buildings and other installments) and then resettled on a different parcel of land. After the passage of the 2010 constitution, the County Government holds unregistered community land in trust for the community hence the acquisition process will be done by the NLC in collaboration with the County Government. The County Governments shall be involved in negotiations alongside the community and the county government shall receive the compensation in trust from the community - then remit the same to the community.

As of October 2018, for the Crude Oil Pipeline, LCDA in partnership with the NLC and Ministry of Petroleum and Mining have been holding land acquisition consultation workshops with County Governments and community members. The NLC, LCDA in concert with County Governments are working together to map people’s land, title the land, compensate affected persons and acquire the land. Below is an illustration of the process of compulsory acquisition in Kenya.

**Process of Compulsory Acquisition as per Part VII of the Land Act, 2012**

1. **Request from National & County Government to NLC**
2. **NLC certifies that land is for public purpose or public interest - issues approval**
3. **Notice of acquisition in Kenya & County Gazettes, to land registry and to affected persons**

**Land Registry**
- Notice of intended acquisition made.
- Georeferencing of land.
- Inspection of land by NLC.
- Set date of inquiry (30 days notice).

**Inquiry**
- Notice of inquiry published 15 days before inquiry.
- Persons with interest in land will be heard, evidence taken & witnesses examined.

**Awards for Compensation**
- Separate awards for compensation made for valid claims.
- Notification of award and offer for compensation is served.
- Prompt payment (either cash or land).

**Possession of land**
- Final survey.
- NLC serves notice of specific day of possession.
- Land vests in national or county government.
- Registrar records acquisition of land.

14 This was the case when land was acquired for Titanium and Rare Earth Mining in Kwale County from as early as 2004.
15 Article 63 (3) of the Constitution of Kenya 2010 states that “Any unregistered community land shall be held in trust by the county governments on behalf of the communities for which it is held.”
Resettlement after Compulsory Acquisition

Resettlement following acquisition of community land or any other land for public use e.g. the proposed Pipeline LAPSETT route is catered for under Section 114 (2) of the Land Act, provides that:

“upon acquisition of land, and prior to taking possession of the land, the Commission may agree with the person who owned that land that instead of receiving an award, the person shall receive a grant of land, not exceeding in value the amount of compensation which the Commission considers would have been awarded, and upon the conclusion of the agreement that person shall be deemed to have conclusively been awarded and to have received all the compensation to which that person is entitled in respect of the interest in that land”

Accordingly, if the community wishes to have a grant of land as opposed to monetary compensation to benefit future generations, they can make this request to the Commission while making the written claim of compensation before and during the inquiry.

IFC Performance Standards on Environmental and Social Sustainability

IFC Performance Standard 5 on Land Acquisition

& Involuntary Resettlement defines involuntary resettlement as the physical and economic displacement resulting from project-related land acquisition and/or restrictions on land use17. Performance Standard 5 is instrumental in the pipeline project as many communities do not hold title deeds but have resided on their lands and depend on their land for their livelihoods18.

The pipeline project as part of the larger LAPSET project will cause the economic and physical displacement of host communities, the 500-meter corridor will cut through people’s farms, homes and pastoralists lands which will impact the communities.

In November 2018, JDA Partners indicated that they had purposed to design, build and operate the pipeline in line with the IFC Performance Standards. This is due to internal policy requirements and the need to meet international project finance requirements (which require compliance with the IFC Performance Standards). In Kenya, the land acquisition process is government driven through the NLC thus Africa Oil and its partners in the JDA should collaborate with the NLC to ensure compensation for physical and economic displacement as follows:

<table>
<thead>
<tr>
<th>Framework</th>
<th>Physical Displacement19</th>
<th>Economic Displacement20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resettlement Action Plan:</td>
<td>Compensation at full replacement cost for land and other assets, Mitigation strategies, Development opportunities, Resettlement Budget and Schedule, Entitlements of categories of affected persons: paying attention to the poor &amp; vulnerable</td>
<td>Livelihood Restoration Plan: Entitlements of affected persons and/or communities</td>
</tr>
<tr>
<td>Formal Right Holders</td>
<td>Choice of replacement property of equal or higher value, security of tenure, equivalent or better characteristics, and advantages of location or cash compensation where appropriate.</td>
<td>Replacement property (e.g., agricultural or commercial sites) of equal or greater value; or where appropriate, cash compensation at full replacement cost Owners of Commercial structures: Cost of reestablishing activities, lost net income during transition period, cost of transfer &amp; reinstallation of plant, machinery and equipment</td>
</tr>
</tbody>
</table>

17 IFC Performance Standard 5 on Environmental and Social Sustainability: Land Acquisition and Involuntary Resettlement, Paragraph 1 includes the definition of involuntary resettlement
18 IFC Performance Standard 5 on Environmental and Social Sustainability: Land Acquisition and Involuntary Resettlement, Paragraph 17 provides 3 classes of displaced people. Those with formal legal rights, those without formal legal rights but have a recognizable claim for instance community land in Kenya and those with no legal right.
19 IFC Performance Standard 5 on Environmental and Social Sustainability: Land Acquisition and Involuntary Resettlement, Paragraph 19–24
20 IFC Performance Standard 5 on Environmental and Social Sustainability: Land Acquisition and Involuntary Resettlement, Paragraph 25–29
2.2 Environmental and Social Safe-guards for the Lokichar Lamu Pipeline

The project will be governed by various laws relating to environmental protection. Article 42 of the Constitution of Kenya 2010 states that everyone is entitled to a clean and healthy environment; in line with this the Environmental Management and Co-ordination Act, 1999 (EMCA) and its regulations provide guidance on how the right to a healthy environment will be respected.

The Strategic Environmental and Social Impact Assessment (SESA)

The Environmental Law provides for two types of environmental governance decision making processes that result in the issuance of a license by NEMA. The first of these is the Strategic Environmental and Social Impact Assessment (SESA) Study which is an overarching study that covers multiple projects. A SESA is conducted for a policy, plan or program- in this case a SESA was conducted for the LAPSSET Program which reviewed the impact of the whole LAPSSET Project including the 50-meter-wide infrastructure corridor where the pipeline shall be built.

The LAPSSET SESA was submitted to NEMA in 2016 and approved in 2017. The SESA process gave communities along the pipeline an opportunity to understand the whole LAPSSET Project and provided some information to communities.

The Integrated Environmental and Social Impact Assessment (IESIA)

The second stage of decision making is the Integrated Environmental and Social Impact Assessment (IESIA) for the proposed Crude Oil Pipeline. This is a more comprehensive process, as it focuses on one project - the Pipeline - as opposed to a SESA which reviews all projects. During the IESIA process all affected communities along the pipeline route shall be informed of the project and given a chance to give their opinion of the project. IESIAs are integral as they deal with the environmental issues, social issues and require for land issues to be dealt with prior to a project proponent being granted a license by NEMA. From June 2018, the Kenya Joint Venture (KJV) began holding stakeholder workshops in various counties where the pipeline will traverse and is set to submit a Study Report to NEMA in the second quarter of 2019.

Below is a diagram illustrating the IESIA Process and highlighting the stages at which communities are involved in the process.

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**Disclaimer on compensation:** For those with no formal recognizable rights the NLC and partner in the acquisition and resettlement processes are required to conduct a census and have a predetermined cut-off date which shall be used to determine the eligibility of affected persons to receive compensation.

---

<table>
<thead>
<tr>
<th>Physical Displacement</th>
<th>Economic Displacement</th>
</tr>
</thead>
<tbody>
<tr>
<td>No formal right but a recognizable claim</td>
<td>Choice of replacement property of equal or higher value, security of tenure, equivalent or better characteristics, and advantages of location or cash compensation where appropriate.</td>
</tr>
<tr>
<td>No recognizable right</td>
<td>Choice of options for adequate housing with security of tenure (protection from forced eviction). Compensation for loss of assets other than land, such as dwellings and other improvements to the land, at full replacement cost,</td>
</tr>
</tbody>
</table>

---

21 Section 57A of the EMCA, 1999 provides for SESAs, further the National Guidelines for Strategic Environmental Assessment in Kenya of 2011 provide a framework for conducting SESAs in Kenya

22 Per the LAPSSET SESA of 2017 LAPSSET was classified as a program after the LCDA undertook a feasibility study of LAPSSET Corridor in 2015 and determined that LAPSSET is a program.

23 The LAPSSET SEA can be accessed here

At the time of writing we had requested NEMA to avail the approval of the LAPSSET SESA and were waiting for the response

24 Section 58 of the EMCA, 1999 provides for application for an EIA License from NEMA through submission of either an ESIA Project Report or an ESIA Study Report for a medium or high risk project.

25 The EIA Regulations, 2003 detail the steps taken for an EIA Project Report, EIA Study Report and Environmental Audit Reports

26 The Second Schedule of EMCA, 1999 (Legal Notice 150 of 2016)
The Environmental Impact Assessment (EIA) Process in Kenya Focusing on Avenues for Public Participation

**The IFC Performance Standards on Environmental and Social Sustainability:**

IFC Performance Standard 1 provides in-depth guidelines on the contents of an EIA and the mode of consultation as elaborated below:

**The Environmental & Social Assessment & Management System**

IFC Performance Standard 1 requires that a client together with government agencies and third parties should conduct and ESIA and establish and maintain an appropriate ESMS incorporating the following:

<table>
<thead>
<tr>
<th>Para</th>
<th>Element</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Policy</td>
<td>Defines environmental and social objectives that will guide the project.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To include the Host Country's laws &amp; obligations under international law;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>company's self-subscribed obligations under international certification</td>
</tr>
<tr>
<td></td>
<td></td>
<td>schemes; and principles under IFC performance standards.</td>
</tr>
<tr>
<td>7-12</td>
<td>Identification of risks and impacts</td>
<td>A full ESIA Study will be conducted that will consider direct and indirect</td>
</tr>
<tr>
<td></td>
<td></td>
<td>impacts, impacts from predictable developments caused by the project,</td>
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<tr>
<td></td>
<td></td>
<td>impact by associated facilities and cumulative impacts. During this</td>
</tr>
<tr>
<td></td>
<td></td>
<td>process, the issues identified by Performance Standards 2-8 must be</td>
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<tr>
<td></td>
<td></td>
<td>considered and addressed. At this stage, the project owners are required</td>
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<tr>
<td></td>
<td></td>
<td>to identify vulnerable groups and differentiated measures shall be applied</td>
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<tr>
<td></td>
<td></td>
<td>to them to ensure they are not disproportionately affected and further</td>
</tr>
<tr>
<td></td>
<td></td>
<td>disadvantaged by the project.</td>
</tr>
<tr>
<td>13-16</td>
<td>Management Programs</td>
<td>The project owners will be required to describe the mitigation and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>performance improvement measures. The mitigation hierarchy will favor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>avoidance over minimization and where residual risk exists compensation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>whether technical or financially will be undertaken. An Environmental and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Social Action Plan should be developed based on the findings of the ESIA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Study.</td>
</tr>
<tr>
<td>17-19</td>
<td>Organization- Capacity &amp; Competency</td>
<td>The IFC client and third parties are expected to establish and maintain a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>structure that clearly sets out the roles, responsibilities and authority</td>
</tr>
<tr>
<td></td>
<td></td>
<td>to implement the ESMS.</td>
</tr>
</tbody>
</table>
As of October 2018, the JDA Partners indicated that they were planning to submit the Kenya ESIA for permitting as per the regulatory requirements. In addition, a Supplemental Assessment document would be produced which will contain all necessary information and further studies required for compliance with IFC Performance Standards. These documents will be disclosed and will form the basis for project financing. The documents referred to are voluntary and non-statutory documents. The partners further clarified that stakeholder engagement for the Kenyan ESIA and the Supplemental Assessment was planned on an integrated basis to ensure consistency in approach and message with stakeholders.

Element | Para | Explanation
---|---|---
Emergency Preparedness & Response | 20-21 | An Emergency Preparedness and Response system shall be put in place and reviewed regularly. Affected Communities and County Governments shall be involved in the preparedness system as they shall potentially be impacted. National & County Governments and communities shall also be regularly informed.
Stakeholder Engagement | 25-36 | Stakeholders ultimately determine whether a project shall be successful, aside from the legal requirements for stakeholder engagement - it makes practical business sense to ensure that stakeholders especially local communities are involved.

**It involves:**

i. Stakeholder analysis and planning\(^{27}\): a Stakeholder Engagement Plan that includes differentiated measures to enable participation of different groups, men & women, young & old and disadvantaged and marginalized groups
ii. Disclosure and dissemination of information\(^{28}\): information on
   a. purpose, nature and scale of the project,
   b. duration,
   c. risks, impacts and mitigation strategies,
   d. stakeholder engagement process and
   e. grievance mechanism ought to be provided
iii. Consultation and participation should\(^{29}\):
   a. begin early in the project lifecycle and continue regularly;
   b. be based on the prior disclosure and dissemination of relevant, transparent, objective, meaningful and easily accessible information in a language and format understandable by Affected Communities;
   c. focus inclusive engagement on those directly affected;
   d. be free of external manipulation, interference, coercion, or intimidation;
   e. enable meaningful participation, where applicable; and
   f. be documented.
iv. Grievance mechanism\(^{30}\); and
v. Ongoing reporting to Affected Communities\(^{31}\): periodic reports should be publicized by the JDA signatories and operators
Monitoring & Review | 17-24 | The JDA partners and the government are expected to carry out perioding monitoring of the effectiveness of the ESMS. Affected communities should also be involved in monitoring for instance on environmental issues such as water and air monitoring. For the pipeline this should be done together with the Annual Environmental Audit Reports that EMCA requires.

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\(^{27}\) IFC Performance Standard 1 on Environmental and Social Sustainability: Assessment and Management of Environmental and Social Risks and Impacts, Paragraph 26
\(^{28}\) ibid., Paragraph 29
\(^{29}\) ibid., Paragraph 30-31
\(^{30}\) ibid., Paragraph 35
\(^{31}\) ibid., Paragraph 36

Delivering Kenya’s Crude: Through People to Market
Rationale and Methodology

This section of the paper seeks to provide an understanding of the economics of the oil pipeline and to provide an integrated economic analysis of the project. Particular emphasis is given to analyzing the minimum required per barrel tariff that the pipeline company will charge the upstream project for moving oil from the Turkana fields to the coast.

A tariff is normally established by ensuring that the pipeline company can cover the costs of constructing and operating the pipeline, raising the necessary financing, paying any required taxes, and generating a reasonable rate of return on their investment.32

This analysis draws on all information currently available on the Lokichar-Lamu pipeline. It is important to note that there are significant information gaps related to the core input assumptions including costs, financing, pipeline company structure and fiscal terms.

A discount cash flow model has been developed for the pipeline. The model provides the basis for the preliminary economic analysis below and can be updated as more information becomes available, particularly once the results of the FEED are known.

3.1 Pipeline Provisions in the Production Sharing Contracts

The Production Sharing Contracts (PSCs) for Block 10BB and 13T established the general terms for the transportation of petroleum by pipeline. As these contracts are not in the public domain, the analysis below is based on Kenya’s 2008 Model PSC.

The PSCs contain an obligation on the part of the Government to facilitate pipeline developments outside of the contract area. Specifically, Article 17(3) states:

The Government shall grant or cause to be granted to the contractor, its contractors and sub-contractors such way-leaves, easements, temporary occupation or other permissions within and without the contract area as are necessary to conduct the petroleum operations and in particular for the purpose of laying, operating and maintaining pipelines and cables, and passage between the contract area and the point of delivery of petroleum.

The Delivery Point

The definition of the “delivery point” determines the boundaries of the PSC terms. All activities before the delivery point are considered petroleum operations and are covered by the terms of the PSC. Article 1(B) Definitions states:

“Delivery Point” means the outlet flange of the final fiscal meter prior to conveyance of title for Petroleum from Contractor to another party.

The definition of “Petroleum Operations” provides further clarity. Article 1(B) Definitions, states:

“Petroleum Operations” means all or any of the operations, authorised under this Contract, related to the exploration for, finding, appraisal, development, extraction, production, separation and treatment, storage, transportation, and sale or disposal of, Petroleum up to the point of export or the agreed Delivery Point in Kenya or the point of entry into a refinery and includes natural gas processing operations but does not include petroleum refining operations.

21 There will be costs for compensation to communities along the pipeline route. These costs have not been explicitly factored into this analysis.

In October 2018 the JDA partners indicated that compensation costs related to land acquisition for the LAPSSET Corridor will be borne by the Government of Kenya. Costs borne by the JDA Partners will be costs related to non-statutory voluntary activities undertaken to meet IFC Performance Standard 5 requirements. These are likely to relate principally to livelihoods restoration activities.
The terms of the PSC, therefore, imply that, in the absence of an alternative agreement, the "delivery point" will be the "point of export."

**Cost Recovery**

The terms for cost recovery are set out in Article 27(1). This section clarifies that "the contractor shall recover the petroleum costs, in respect of all petroleum operations, incurred and paid by the contractor pursuant to the provisions of this contract..."

According to the terms of the PSC, there appear to be two different ways in which pipeline costs could be managed. First, it is possible that pipeline costs could be managed entirely within the upstream project and the terms of the PSC. Under this scenario, costs associated with pipeline development, operations and financing would be cost recoverable. This is the approach used for the Mangala pipeline in India. Second, it is possible that the pipeline will be constructed and operated by a separate pipeline company. Under this scenario, it is the per barrel tariff that would be cost recoverable. This analysis is based on the assumption that the pipeline will be constructed and operated by an independent company. The pipeline company would charge a per barrel tariff for the transportation of oil to the coast. Ownership of the pipeline would be split between Upstream Partners and the Government of Kenya. The pipeline company would secure the financing necessary for pipeline construction. The pipeline would also be available to transport oil from other Blocks within Kenya.

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### Table 1: Estimated Recoverable Reserves

| Block 10BB | 336 million barrels |
| Block 13T | 224 million barrels |

Tullow and Africa Oil have both recently published production profiles for Blocks 10BB and 13T (Details provided in Annex I). They propose to develop the Blocks in two phases. A first “foundation phase” would be developed in Block 10BB. This phase would generate a forecast 60,000 barrels of oil per day (bopd). A second incremental phase would exploit the remaining resources in 10BB and also those in 13T and would result in the production of 100,000 bopd. Figure 1 below shows the production profile assumptions, building on public domain data provided by Tullow and Africa Oil. Based on this information, it would appear that a pipeline with the capacity to export 100,000 bopd would operate at full capacity through Year 10.

---

**3.2 Pipeline Modelling Inputs and Assumptions**

The tariff will be a per barrel fee to compensate the pipeline company for the costs of pipeline construction and financing, annual pipeline operations, taxes, and a reasonable rate of return for the pipeline company.33

**Pipeline Throughput**

The starting point for an analysis of pipeline economics is the expected volume of oil to be exported through the pipeline. This volume is known as pipeline “throughput.” It depends on the total volume of oil available for export, and on approach to field development resulting in a forecast daily rate of production.

In early 2018, Tullow disclosed new data on oil resources in Blocks 10BB and 13T.

"Following a full assessment of all the exploration and appraisal data, Tullow estimates that the South Lokichar basin contains the following recoverable resources: 240 – 560 – 1,230 mmbo (1C-2C-3C) from an overall discovered STOIIP of up to 4 billion barrels.” 34

This disclosure indicates that Tullow believes that the two Blocks will generate 560 million barrels of oil with a confidence level of 50%.

Drawing on previous Africa Oil disclosures on the relative allocation of oil across the two Blocks, estimate recoverable reserves as set out in Table 1 below.

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33 Economic analyses of the pipeline include a target rate of return for the EACOP of 10%. See Joint Technical Team for Crude Oil Export Pipeline, Analysis of a least cost route to the East African coast, Draft Final Report 2.0, 2015, p. 14.

34 Company Profile, Tullow Oil plc, April 2018, p. 4.
It is possible, perhaps even likely, that more oil will be found in 10BB and 13T. Additional reserves could also be discovered in surrounding Blocks. A “future development” case that would add an additional 175 million barrels for export has been created. Under this scenario, the pipeline operates at full capacity through Year 15. It is important to note, however, that initial decisions about the tariff would be based on current estimates of recoverable oil. Unproven oil volumes, therefore, are not included in the base case for this study.

**Pipeline Capital and Operating Costs**

Reliable estimates of pipeline capital and operating costs will only be available in early 2018 when the FEED has been completed.

The Ministry has indicated that it estimates capital costs for the Lokichar-Lamu pipeline at $2.1 billion. There do not appear to be further details on what is included in this estimate. It is assumed that it includes the costs of purchasing and laying the pipe as well as the construction of the pumping/heating stations. It is not clear whether it also includes the storage and export terminal at Lamu. It should be noted that cost overruns of 10-15% are common on large-scale infrastructure projects and in some cases are much higher. It is also unclear whether compensation for communities along the pipeline route has been included in these cost estimates. The main operating costs would include energy, maintenance, personnel, insurance and security. Operating costs are normally broken down into fixed (unaffected by pipeline throughput including personnel and maintenance) and variable costs (affected by pipeline throughput including energy). There do not appear to be any public domain references to expected operating costs for the Lokichar-Lamu pipeline. There are two available reference points for the Lokichar-Lamu pipeline. Annual operating costs for the Hoima-Lokichar-Lamu pipeline have been estimated at $131 million with $90 million for the Kenya section (933 kms with throughput of 300,000 bopd). Annual operating costs for the East African Crude Oil Pipeline (EACOP) have been estimated at around $88 million (1,455 kms with throughput of 200,000 bopd). For this analysis, operating costs of $56.7 million per year, prorated from the Toyota Tsusho study are assumed.

**Pipeline Financing**

Given the large capital investment, pipeline financing represents a significant additional cost. The Toyota Tsusho study suggested that

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35 Hoima-Lokichar-Lamu Crude Oil Pipeline, Toyota Tsusho Corporation, 2015
36 Joint Technical Team for Crude Oil Export Pipeline, 2015, p. 16.
with capital costs of $4.7 billion, “capitalized interest during construction” alone could amount to $986 million. This figure would not include the additional interest charges that would be incurred over the 15 years of loan payment.

Experience with other pipelines suggests that project finance would likely come from a combination of international financial institutions (International Finance Corporation38, African Development Bank), national export credit agencies and private banks. There does not appear to be any information on the financing approach that will be adopted for the Lokichar-Lamu pipeline. A separate financing study will likely be commissioned in parallel with the FEED.

Our financing assumptions are drawn from the Toyota Tsusho study. They assume that 70% of the project would be financed through debt at an interest rate of 10% with repayment made over 15 equal installments.

**Pipeline Ownership and Fiscal Terms**

There is no public domain information on the corporate structure that will be adopted for the Lokichar-Lamu pipeline. There are suggestions that a separate pipeline company will be established and ownership would likely be divided between the upstream partners and the Government of Kenya.

There is no public domain information on the fiscal terms that might apply to such a company. In the absence of other sources of information, our base case assumptions come from the Kenya Pipeline Company Limited. Annual reports indicate that the company pays corporate income tax at the standard rate of 30%, with straight-line depreciation on pipelines and tanks at 4% per annum.39 Similar terms were also used in the Toyota Tsusho study.40 It is not uncommon for governments to offer tax holidays for major infrastructure projects. The Government of Kenya may decide to concentrate its revenue interests in the petroleum upstream in order to reduce the pipeline tariff. For this analysis, exemptions from VAT, customs duties and withholding taxes have been assumed.

### Table 2: Summary of Base Case Modelling Inputs and Assumptions

<table>
<thead>
<tr>
<th><strong>Production/Exports</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pipeline export for 25 years.</td>
<td></td>
</tr>
<tr>
<td>Export volume for base case 560 million barrels.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Pipeline Costs</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital costs: $2.1 billion.</td>
<td></td>
</tr>
<tr>
<td>Operating costs: $56.7 million/yr.</td>
<td></td>
</tr>
<tr>
<td>Financing: 30% equity, 70% debt at 10% with repayment over 15 years.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Ownership / Fiscal</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent pipeline company – GoK (20%) and KJV (80%) equity stakes.</td>
<td></td>
</tr>
<tr>
<td>30% corporate income tax.</td>
<td></td>
</tr>
<tr>
<td>Capital depreciation for taxation of 25 years.</td>
<td></td>
</tr>
<tr>
<td>Exemptions for customs, VAT and withholding taxes.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Economic Inputs</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal discount rate of 11.5%.</td>
<td></td>
</tr>
<tr>
<td>USD dollar inflation (capex, opex, tariff) 1.6% from start of spending.</td>
<td></td>
</tr>
</tbody>
</table>
3.3 Economic Analysis

A discount cash flow model has been prepared based on the inputs and assumptions set out above. The model is used to generate a minimum required tariff that covers capital, operating and finance costs, applicable taxes and generates a reasonable rate of return for the pipeline company. The minimum required tariff is the price that generates a net present value for the pipeline company of $0.

**Base Case**

Figure 2 below shows the annual cash flow breakdown for the pipeline company under our base case assumptions.

![Figure 2: Annual Cash Flow Under Base Case Assumptions](image)

Overall project cash flow is shown in Table 3 below.

<table>
<thead>
<tr>
<th></th>
<th>Gross Revenue</th>
<th>Project (Unlevered)</th>
<th>Project (Levered)</th>
<th>Government Tax</th>
<th>State Participation</th>
<th>IOC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8607</td>
<td>4633</td>
<td>3049</td>
<td>1035</td>
<td>403</td>
<td>1611</td>
</tr>
</tbody>
</table>

Consistent with analyses of the Hoima-Lokichar-Lamu pipeline and the Hoima-Tanga pipeline, it is assumed that the minimum required tariff is the per barrel fee necessary to cover project costs, taxes and an acceptable rate of return for the pipeline company. These conditions are met when the results of the model generate a net present value (NPV) of $0.

The minimum required tariff in order to generate under our base case assumptions is $12.50 per barrel.

**Sensitivities and Scenarios**

Table 4 also provides sensitivities for a number of important variables including cost over-runs, different rates of interest for pipeline financing, the possibility of a tax holiday, and the implications of an additional throughput of 175 million barrels.
The results suggest that the tariff is highly sensitive to capital cost over-runs. A 20% capital cost increase results in a tariff increase of about $2 dollars per barrel. Changes in operating costs have much less impact with a 20% increase resulting in a tariff increase of about $0.50.

Interest rates of debt financing costs would also have a significant impact on the tariff, as the costs of financing under any of these scenarios amounts to more than one billion dollars. The difference between borrowing at a rate of 8% versus a rate of 12% would result in a tariff increase of $1.70.

It is not uncommon for large infrastructure projects to receive significant tax incentives. Under our base case assumptions, the pipeline company would pay more than $950 million in corporate tax over the life of the project. A ten-year tax holiday would result in a reduction in the pipeline tariff of $0.80 with Government revenue from the pipeline falling to around $480 million. A total exemption from corporate tax would allow for a tariff of $11.20.

Additional throughput could have a significant impact on the pipeline tariff, as under the base case scenario the pipeline operates at full capacity for only the first ten years. Increasing throughput by 175 million barrels would result in a minimum required tariff of around $11.10.

### Production Profiles

![Production Profile, Tullow Oil, 2017 Annual Report](image-url)
3.4 Key Findings on the Economics of the Pipeline

A heated pipeline required for crude from the Lokichar Basin will be much more expensive to build and operate than a normal pipeline. In illustration, Kenya crude from the amosing well will need to be heated to 85 degrees as the wax-appearance temperature has been measured at between 60 degrees and 63 degrees. As a result, the tariff for the Lokichar-Lamu pipeline will represent a significant portion of the overall costs for the Turkana fields.

There are few heated pipelines that offer good points of reference. The longest heated pipeline

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42 Need to find one or two documents here.
in the world to-date is the Mangala Development Pipeline in India. As the Mangala pipeline is an integral part of the upstream petroleum operations, there is no per barrel tariff. A broader study on heated pipelines in India suggests that capital and operating costs for a heated pipeline are more than three times that of an unheated line.\textsuperscript{45} For a pipeline the length of the proposed Lokichar-Lamu pipeline, that analysis would suggest the cost of transportation alone (capital and operating costs) would be more than $10 per barrel. This figure would not include the costs of financing, the impact of tax, or a return on investment for the pipeline company.

The forecast pipeline tariff was a decisive factor in the decision by Uganda to adopt the Tanzania route. Uganda recognizes that significant upstream revenues are at risk as the pipeline tariff increases. Pre-FEED estimates are capital costs are $3.5 billion with operating costs at $88 million per year. While the pipeline is considerably longer (1,445km), it also has substantially greater proposed throughput (200,000 barrels per day). There has been a strong political commitment in both Uganda and Tanzania to retain a proposed tariff of $12.20 per barrel. In order to keep pipeline costs down, Tanzania has decided to forego any transit fee (a per barrel fee for the right to transit across their territory) and the two countries have offered a series of tax incentives including a 10-year tax holiday. Upward pressure on the tariff can be expected as the FEED generates more reliable cost estimates.

For the Lokichar-Lamu pipeline, it has been assumed an 821km pipeline, a throughput of 100,000 barrels of oil per day (bopd), capital costs of $2.1 billion and operating costs of $56.7 million per year. Under our base case assumptions, this analysis suggests that the minimum required tariff (NPV = 0) for the Lokichar-Lamu pipeline would be around $12.50 per barrel.

This analysis has focused exclusively on the economics of the proposed Lokichar-Lamu pipeline. Based on the fiscal terms currently applicable to the Kenya Pipeline Company, the Government stands to generate as much as $1 billion in corporate tax over the lifespan of crude oil exports through the Lokichar-Lamu pipeline.

From the perspective of maximizing Government revenues from oil developments in the South Lokichar Basin, however, the pipeline and the upstream oil operations are integrally linked. The overall impact of differing tariff rates on Government revenues should be assessed through an integrated economic analysis of both the upstream projects and the pipeline. Such an integrated analysis is particularly important in cases, as is anticipated here, where upstream companies are also majority owners in transportation infrastructure create risks of profit shifting through transfer mispricing.

\textbf{On the basis of our analysis, the following additional conclusions are drawn.}

\begin{itemize}
  \item The pipeline tariff is highly sensitive to capital costs and cost over-runs (common for large infrastructure projects) could require a significant increase to the minimum required tariff.
  \item Significant reductions in the pipeline tariff could come from a reduction in capital costs (unlikely), a reduction in the costs of financing (possible by engaging international financial institutions and export credit agencies), and offering the pipeline company investment incentives such as a tax holiday.
  \item Profitability of the pipeline company is highly dependent on pipeline throughput. As additional oil could be found in Blocks 10BB and 13T, or in surrounding Blocks, the tariff should be adjusted if throughput exceeds original expectations.
  \item A Community share of tariff of even $ 50 cents would encourage buy in and shared benefits especially as they are taking in the impacts.
\end{itemize}

\textsuperscript{45} Anand Kumar Tewari, Table 3, Transportation of heavy crude oils through Heated Pipeline - Assessment of Relative Economics, Pipeline Technology Conference, Berlin, 2015.
4.0 Project Risks & Learning

Technical risks

In the Toyota Tsusho report the least-cost option is picked as the preferred option. This least-cost approach does not appear to take into consideration the physical security of the pipeline as part of the selection criteria. Better options evaluated in the report are only marginally more costly, as little as 3 percent. In illustration, a bigger pipe diameter would reduce the number of pump stations and associated power demand requirements. The result would be a reduction in the number of critical above-ground facilities and would reduce air pollution and greenhouse gas emissions at the pump station along the Lokichar –Lamu pipeline.

The pipeline would also need more block valves at critical points (rivers, unstable soil), and much better definition of the scope of the pipeline monitoring program. For example, clarification is needed to understand whether continuous pipeline right-of-way foot patrols will be used, whether GPS position locator points will be installed along the pipeline to permit remote assessment as to whether the pipeline is getting stressed by external forces in unstable areas, along with regular internal pipeline monitoring to corroborate pipeline integrity. The pipeline also needs an independent auditing team, not subject to local and/or company political or economic pressure, as an early warning system to anticipate problems before they result in pipeline ruptures.

As the Camisea Pipeline experience in Peru showed, a key risk is the push to have development as soon as possible. The risk is two-fold. Firstly, the temptation to set unrealistic deadlines and inadequate capital budgets that may lead to shoddy, hasty workmanship. In the case of the Camisea Pipeline, after a series of ruptures of the pipeline it was discovered that some of the welders had been inadequately trained, and lacked the requisite qualifications. It was also determined that the geotechnical surveys of the route prior to construction had been inadequate, resulting in the pipeline being subject to unexpected external forces that contributed to the ruptures.

Secondly, local content is viewed in many communities as a key aspect of beneficiation by communities impacted by infrastructure and oil/gas exploration. Indeed, during KCSPOG interviews employment was a viewed as a key benefit by communities on the ground of the pipeline development. The developers of the pipeline face the challenge of appeasing local populations appeals for employment and ensuring that the team has the technical capabilities to deliver the project. One form of employment of community members that has been effective in the case of Peruvian oilfields in the jungle is the employment of community members as trained members of independent monitoring teams tasked with conducting continuous field surveys to assure that: 1) the oil or pipeline company stays current with operations and maintenance obligations, and 2) that spills and other environmental contamination is promptly addressed by the company. A key condition of the effectiveness of this type of monitoring is that the community members in these monitoring teams are not paid by the operating company to perform the monitoring, as inevitably this structure allows the company to control the work of the monitoring teams. A photo of a Peruvian indigenous monitoring team at work is shown in Figure 1. Monitoring results are reported at a community assembly in Figure 2.
Economic Risks

The economic risks associated with the pipeline are lower than anticipated revenues/volumes and delays in construction, either of these situations would result in a more expensive project as elaborated on below:

Decrease in Throughput: A drop in oil exports will have implications for upstream revenues. It is possible to assess how much revenues to the pipeline company would be reduced if throughput fell below full capacity. A fall in throughput for whatever reason would result in a fall in revenues.

Compensation Delays: Any delays around compensation would prolong the time for construction. The Prevention, Protection and Assistance to Internally Displaced Persons and Affected Communities Act, 2012 requires that when people are consulted and informed when they are displaced from their home by infrastructural projects. Delays in the construction phase of the pipeline will result in massive costs. This was the case with the Kenyan products pipeline which was to be completed in 2016 but as of 2018 was still under construction. In this case, the contractor demanded that the government of Kenya pay them $15.2 Billion for the delay.

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Environmental & Social Risks

The Lamu-Lokichar pipeline project will traverse the lands of numerous indigenous communities and fragile eco-systems. The pipeline will traverse pastoralist’s lands, community conservation ranches, maritime ecosystems amongst other areas. The Chad Cameroon Pipeline serves as a good example of possible environmental and socio-economic impacts that the pipeline will have on indigenous communities. The case of the Bagyéli people can be used for the indigenous pastoralist communities who will interact with the pipeline. The lessons at the end of this case study apply to the Kenyan pipeline case.

Chad- Cameroon Pipeline Case Study

The Chad- Cameroon Pipeline Project began in 2000 when the World Bank and IFC invested $3.7 Billion in the drilling of 300 oil wells in the Doba region in southern Chad and the construction of a 1070km pipeline with an operating capacity of 225,000 bpd. The consortium of operators was ExxonMobil (40%), Petronas (35%) and Chevron (25%) - additionally, the Cameroon Oil Transportation Company (COTCO) and the Tchad Oil Transportation Company (TOTCO) managed the pipeline on their respective counties. The pipeline, which began operation in 2003, runs from the Doba Oil Field in Chad through the tropical rainforests of Cameroon to a floating export facility at Kribi, Cameroon, in the Gulf of Guinea. In Cameroon, the pipeline runs under water for 18km to get to the export facility.

Since 2000 there have been numerous political, social, economic and environmental concerns over the pipeline raised by environmental and human rights groups. The legitimacy of these concerns was confirmed by the militarisation of some communities and oil spills which occurred early in the pipeline’s operating period. Below, we shall briefly discuss the environmental and socio-economic impacts of the project and pick some lessons that can be applied to the crude oil pipeline.

Environmental Impacts:

Oil Spills: There have been two instances of offshore oil spills from the pipeline. On 15th January 2007, at 3:00am there was an oil spill at the offshore transfer facility and was only detected at 7:00am. The Centre for the Environment and Development (CED) and Réseau de Lutte contre la Faim (RELUFA) released a press statement that highlighted the technical failure on their part of COTCO as they took 4 hours to detect the leak and the lack of communication from COTCO to the fishing communities. A second oil spill was detected on 22nd April 2010, at 1:45am, which was responded to faster by local government but CED and RELUFA released a statement documenting the fact the fishermen had seen traces of oil 12km from the site of the spillage and questioned the emergency preparedness of COTCO.

Deforestation and Loss of Vegetation Cover: In the Kribi region- the pipeline traversed forests traditionally inhabited by the Bagyéli forest community. The Bagyéli were, however, side-lined and not consulted during the conception of the project. This resulted in their displacement but also the unchecked deforestation of the indigenous forests. The destruction of the forest and the Bagyéli’s environment set in place the beginning of negative socio-economic impacts. The loss of biodiversity led to the loss of a source of livelihood for forest dwelling communities and the fact that compensation was inadequate further affected these indigenous peoples.

Socio-economic Impacts

Indigenous Peoples Rights: In Cameroon, the section between Lolodorf and Kribi the pipeline traverse approximately 100km of land used by indigenous Bagyéli forest communities, alongside larger Bantou farming communities- this land was previously subject to customary land tenure rules. In line with the World Bank’s operational directives on indigenous people, COTCO put in place a Compensation Programme (CP) to ensure the interests of the indigenous peoples were safeguarded. However, numerous reports showed that the indigenous peoples were hardly compensated and were sidelined by the Bantou. According to a 2002 report the compensation plan was discriminatory towards the Bagyéli, and

Additional financiers included; the European Investment Bank (144 million euros); the US Export-Import Bank (US$200 million); the French export credit agency COFACE (US$200 million) and a consortium of private banks lead by Dutch ABN-Amro and Crédit Agricole Indosuez.

Centre for the Environment and Development (CED) and Réseau de Lutte Contre la Faim (RELUFA), ‘Press Release Kribi Oil Spill,’ http://www.relufa.org/partners/jhnewsletter/documents/KribiOilSpill.doc

Centre for the Environment and Development (CED) and Réseau de Lutte Contre la Faim (RELUFA), ‘Press Release Another oil leak on the marine terminal of the Chad- Cameroon pipeline,’ http://www.relufa.org/documents/Pressreleaseoilspillapril2010.pdf

there have been numerous instances where compensation due to a Bagyéli community member was instead paid to a member of the Bantou tribe[^53]. This has resulted in landlessness and destruction of the indigenous people’s livelihoods, and culture[^55].

**Inadequate Compensation:** For the people who were compensated, there have been claims that their land and the crops on their land was undervalued. The situation was worse for illiterate people who solely depended on their farms for their livelihoods. One man who followed up on his compensation for destruction of crops on his land—finally got compensation after more than 3 years of following up and even had to go to court—in the end the amount he received in compensation equalled the amount he used while following up on his compensation[^55]. In the instances above the pipeline left people worse off than they were.

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**Lessons from the Chad Cameroon Pipeline to the Lamu Lokichar Pipeline**

- Proper emergency preparedness plan that clearly states the operators, county & national government and host community responsibility.

- Consultation of all affected communities including indigenous communities.

- Need for a transparent and elaborate compensation plan—everyone must know how much they will get for their land and the crops on their land.

- Proper mapping of stakeholder and compensation procedures.

- In-depth understanding of customary tenure rules and using them to arrive at a fair compensation trade off.

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5.0 Recommendations

**Land: Emerging Approaches to Compensation to Benefit Future Generations**

As elaborated earlier land acquisition is key in the development of the Crude Oil Pipeline; thus, we have the following recommendations:

i. **Compensation for Current & Future Generations**

The proposed LAPSSET project will have long term impacts on the community and the future generations. In line with Section 35 of the CLA the NLC and LCDA should work with County Governments and communities to explore compensation options that will benefit future generations and ensure preservation of cultural practices, most importantly pastoralism. The following alternatives should be explored:

a) Community Beneficiation: Communities should negotiate to obtain a percentage of the transit fees as a means of self-sustenance following the likely impacts on their current livelihoods. Notwithstanding that pipelines create few jobs communities should explore negotiating for job quotas during construction and post completion of the pipeline. Furthermore, communities should leverage on the linkages created by the pipeline project and develop technical skills such as welding that can be used in other industries such as construction. To ensure an informed discussion, the JDA Partners should publish information on the number and types of jobs available at the different stages of construction including the skill needed for employment, this data will ensure management of expectations.

b) Longevity of beneficiation: Explore the possibility of a joint venture where communities give up their land in exchange for equity in the LAPSSET project. In this case, the community will enter into a joint venture agreement with the LAPSSET project stating the percentage shareholding and the fact that the community will only give its land and nothing else. Staggered payments are a sustainable mode of compensation as it protects the interests of future generations. There is recognition of the fact that the LAPSSET project may not offer immediate return and may take years or decades to have a monetary return to the country and consequently to communities.

For compensation to be effectively done, and safeguard the interests of future generations, communities should incorporate a trust where a few members of the community (the “Trustees”) can hold the LAPSSET Benefits for and on behalf of the community.
**Model Community Trust**

*The trust deed, being the constitutive document for the trust, will clearly state:*

a) the names of the trustees and the fact that they are holding the LAPSSET Benefits in trust for the community both current and future (the "Beneficiary");

b) that the Trustees cannot utilize, sell, transfer or charge (i) the LAPSSET Benefits without the Beneficiary’s consent which consent shall be in the form of the Beneficiary’s minutes of an annual general meeting;

c) that the Beneficiary shall be responsible for appointment of new Trustees who shall be replaced from time to time as and when the Beneficiary deem it necessary; and

d) that the Beneficiary shall indemnify the Trustees against all claims, costs and expenses which the Trustees may suffer as a result of the trust.

The Trustees will be bound by the provisions of the Trust Deed and any third party will be obliged to comply with the provisions of the Trust Deed to obtain a good title to the LAPSSET Benefits.

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**ii. National Land Commission (NLC)**

During the valuation process the NLC in conjunction LCDA and County Government will be involved in the valuation of land and improvements on land to inform the compensation. During this process, there is need to ensure that the valuation process is done transparently as indicated below:

a) The NLC, LCDA and County Governments should come up with detailed guidelines that will guide the compensation process and publicly disclose them;

b) The NLC should develop a valuation index and guidelines of the valuation process and disclose the same publicly;

c) The NLC should contract and independent land valuation specialist to enable them have multiple sets of valuation data that they can compare and then arrive at a cost effective and just valuation index;

d) During the valuation process the unique needs of marginalized groups including women, pastoralists and disabled persons (to name a few) should be identified and catered to; and

e) There should be prompt and just compensation once the NLC identifies the land to be acquired.

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**iii. Resettlement Action Plan**

As of October 2018, Kenya did not have legislation that governs Resettlement Action Plans. To ensure that a fair deal is reached and that just compensation is paid out we propose that the Resettlement Action Plan should:

a) Be developed in a participatory and transparent manner. During the development, monthly updates should be given to communities and the general public in form of information meetings and press briefings;

b) Be developed with the full participation of women and other marginalized groups including a special seat for pastoralists;

c) Compensation should be based on fair market value and at full cost of replacement paid promptly;

d) Include a provision to cater for communities involuntarily displaced to allow them access unbiased information to guide their choices on whether to accept cash or land compensation.

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**Strengthening the (Integrated Environmental Impact Assessment) IEIA Process**

While the IEIA Process in Kenya is rigorous there still exist loop holes when it comes to public participation especially in the community meetings. There have been numerous exam-
The pipeline project will be subject to a full IE-SIA study and as of October 2018 the stakeholder consultation process had already begun. As has been briefly discussed earlier, Kenya’s laws are not clear on what is expected of proponents during public participation. The fact that a public hearing and a Technical Advisory Committee is not mandatory under EMCA and the EIA Regulations, shows the insufficiency with regards to adequate consultation under Kenyan Law. We therefore make the following recommendations:

i. **Structured EIA Meetings**

Consultation for the pipeline project should begin early in the project lifecycle and continue throughout the project. In the case of the pipeline project- the JDA Consultants began consultations early (June 2018), however KCSPOG’s documentary, ‘Pipeline Voices’, highlights the gaps in consultation with communities along the route- as an ESIA is yet to be submitted to NEMA we cannot conclude that there has been inadequate consultation.

During EIA meetings, the proponent should disclose the following information:

- purpose, nature and scale of the project,
- duration,
- risks, impacts and mitigation strategies,

The information should be meaningful and easily accessible information in a language and format understandable by Affected Communities. The proponent should inform the communities of the broader impact of the LAPSSET infrastructural corridor, without limiting themselves to the pipeline, as there will be associated infrastructure.

Additionally, consultation and participation should:

- be based on the prior disclosure and dissemination of relevant, transparent, objective, meaningful and easily accessible information
- focus inclusive engagement on those directly affected;
- be free of external manipulation, interference, coercion, or intimidation;
- enable meaningful participation, where applicable; and
- be documented.

ii. **Formation of a Technical Advisory Committee (TAC)**

Section 61 of EMCA states that NEMA may set up a technical advisory committee to advise it on environmental impact assessment related reports. A TAC should consist of at least 5 multi-disciplinary specialists who will advise NEMA on EIAs.

The law allows for NEMA to decide whether or not to have a TAC. As this is a heated crude oil pipeline- the first of its kind in Kenya and East Africa it is crucial for NEMA to set up a TAC and ensure that NEMA in its EIA Conditions to the JDA on the pipeline issue technically sound recommendations.

iii. **Public Hearing:**

We propose that a Public Hearing must be held for the pipeline project as this is the first heated crude oil pipeline in Kenya. It is vital to hold a public hearing as this will enable host communities to understand the project better; during the public hearing the proponent makes a presentation and is required to respond to questions from the audience. Public Hearings are optional under EMCA, however these are important meetings held near the location of the project hence predominantly host communities will be in attendance.

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56 Mohamed Ali Baadi and others v Attorney General & 11 others[2018] eKLR, Paragraph 338 Summary of Findings Section D & E, accessed at http://kenyalaw.org/caselaw/cases/view/156405/, In this case the High Court directed the respondents to craft a Public Participation plan which includes an information dissemination component in order to inform the affected communities of the Lamu Port project, its impacts and the mitigation measures.

57 In June 2018 LAPSSET and KJV’s ESIA Consultants invited stakeholders for scoping stakeholder workshops. As of October 2018, Africa Oil stated that the stakeholder consultation process was still ongoing.

58 EIA Regulation 22 provides that NEMA may hold a Public Hearing if it has received oral and written comments as envisioned in Section 59 & 60 of EMCA.
In summary, it is recommended that EIA meetings should be held in a manner that makes them informative and enables consultation with the public, further TACs and Public Hearings should be constituted during the IEIA process of the Crude Oil Pipeline.

iv. Access to Environmental Information

We propose that the JDA Partners in collaboration with NEMA ensure that a summary of the EIA Report is presented to communities in a language and format that they can easily understand in order to ensure adequate participation of the host communities.

We further propose that once the EIA Report has been approved and an EIA license has been issued; NEMA and the JDA partners should hold update informational meetings with host communities to communicate the decision to them and the finalised Environment Management & Monitoring Plan (EMMP).

v. Pipeline Monitoring Team

The Ministry in charge of Petroleum, NEMA and the Upstream Regulator should put in place a framework for regular audits and supervision of the pipeline, in addition to the annual Environmental Audits. Periodic monitoring will enable detection of structural issues, vandalism and any other risk to the pipeline as in some instances the automated systems may lead to a delayed response as was witnessed with the Peru Camisea Pipeline and the Chad- Cameroon Pipeline.

Economics and Project Financing

Relating to the economic arrangements around the pipeline we make the following recommendations:

i. Protecting Future Revenues

While a favourable tax regime may assist the pipeline project, there is a risk of loss of revenue to the country. There is the possibility of additional oil being found in Blocks 10BB and 13T, or in surrounding Blocks, which will cause throughput to exceed original expectations hence increasing profitability. The pipeline agreement should contain a provision for review of the tariff if changing circumstances result in a significant increase in the profitability for the pipeline company.59 This way the operators will ensure that the pipeline is ultimately beneficial to the country.

ii. Financial Agreements

We recommend that Financial Agreements relating to the pipeline should be publicly available, this recommendation is based on three key reasons:

- First, these agreements have a direct implication on public debt and in the event of an increase in public debt as a result of the project the Kenyan public will have to pay additional tax.
- Secondly, transparency allows for accountability and public scrutiny which will prevent practices such as profit shifting from upstream to midstream and vice versa.
- Finally, public disclosure will enable various stakeholder ranging from the legislature to the general public be able to critique non-optimal tax incentives to the pipeline project which can unfairly burden a different class of tax payers.

iii. Integrated Economic Analysis

We recommend that the Government of Kenya should conduct an independent Integrated Economic Analysis of the Pipeline and Upstream operations. This will inform key policy decisions and enable the government negotiate for a better deal and make necessary adjustments to the economic and financial arrangements.

Stakeholder Engagement

We propose that there be a stakeholder engagement framework that considers the environmental management and monitoring, the resettlement framework. In line with best

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59 Jacky Mandelbaum, Salli Anne Swartz and John Hauert, Periodic review in natural resource contracts, Columbia Centre on Sustainable Investment, 2014.
practice and the IFC Performance Standard 1 on Environmental and Social Sustainability: Assessment and Management of Environmental and Social Risks and Impacts; the framework should have differentiated measures to enable participation of different groups, men & women, young & old and disadvantaged and marginalized groups.

This framework should be developed by the JDA partners and communicated to the Government and Communities quarterly to allow for review.

**Compliance with the IFC Performance Standards**

We recommend that the JDA and its partners should abide by the IFC Performance Standards as these serve as International Best Practice that have been used in the upstream operations in Turkana. The performance standards relating to land acquisition and environmental safeguards will be instrumental in the pipeline project.

Further, Total and Tullow have stated that they will abide by the IFC Performance Standards even though they currently don’t have financing from the IFC.