



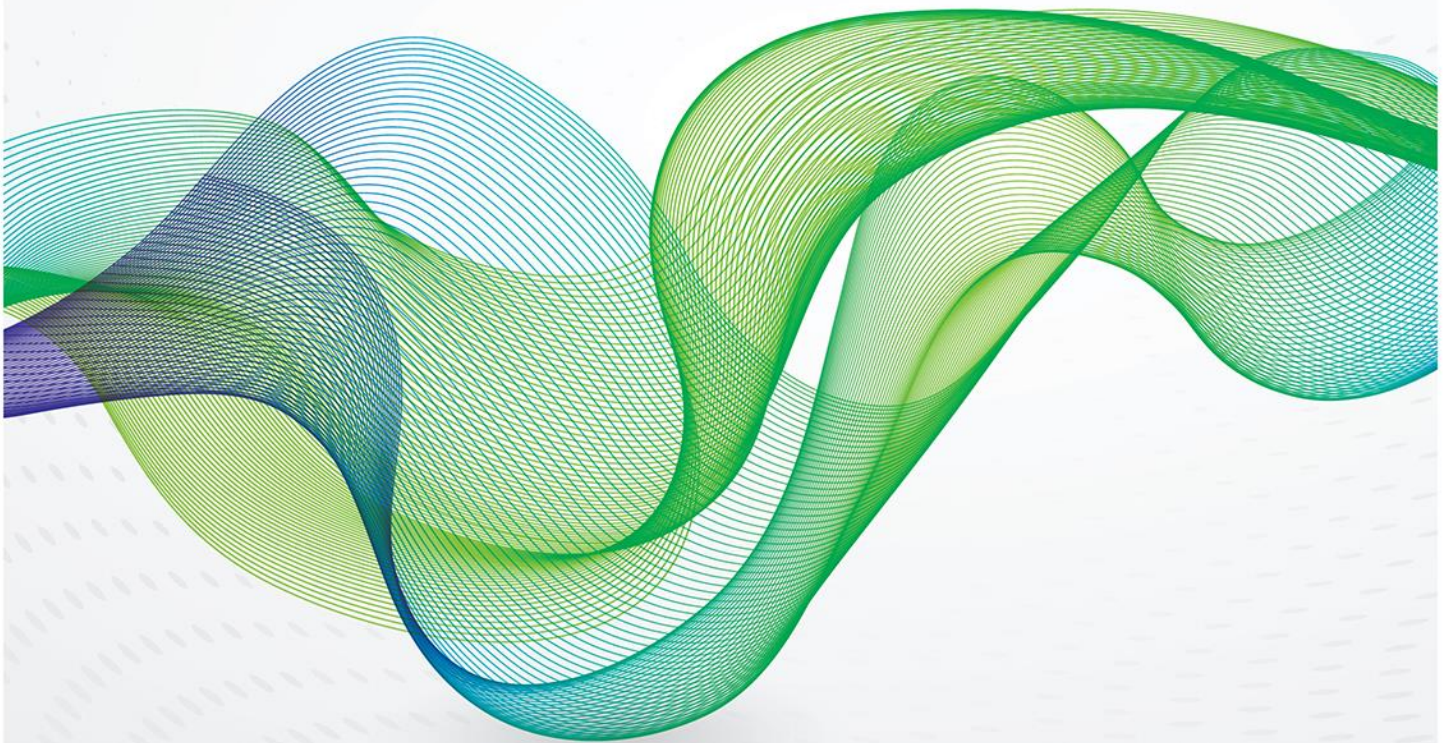
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A Belated Boom: Uganda, Kenya, South Sudan, and prospects and risks for oil in East Africa



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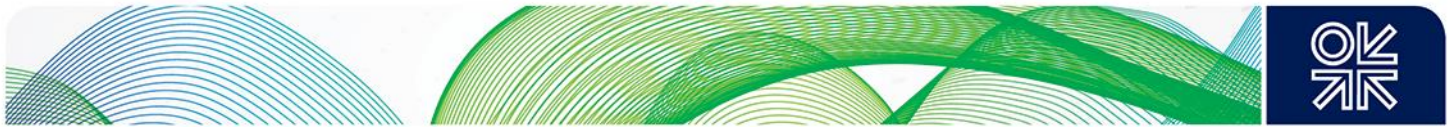


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I. Introduction

East Africa has followed a long road of highs and lows in developing its oil resources. On the back of high global oil prices between 2004 and 2014, a rush of new exploration put the region on the map as a new frontier for African oil. Large onshore oil finds in Uganda in 2006 and six years later in Kenya fueled optimism over the region's prospects. In total, nearly \$13 billion, 32% of investment in Africa's oil and gas industry, went to East Africa in 2012.¹ The flood of investment offered hope the region's oil industry wouldn't fade away with South Sudan's declining oilfields.

But it did not take long for the momentum of East Africa's oil rush to lose steam. Long regulatory delays starting in 2010 slowed Uganda's advancement. Civil war in South Sudan broke out in late 2013, scuttling hopes for an investment boon. Then came the fall in global oil prices in mid-2014. It all served to deflate expectations for the region's potential and slowed progress towards the development of a new regional pipeline. Together, a diverse set of political, security, and social risks are present at varying levels across East Africa.

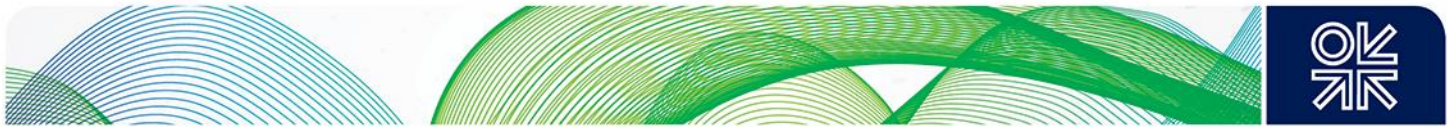
Beyond the impact of domestic political and security conditions, however, what defines the emergence of East Africa as a new African energy centre is the growing influence of regional politics. Never in the history of oil exploitation on the continent, where most oil producers both extract and transport onshore and offshore oil from within their own borders, have regional relations been so crucial to the success of domestic oil industries. Unlocking the oil potential of Uganda, a landlocked country, requires cooperation with one of its neighbours, either Kenya or Tanzania, to develop a regional pipeline. While the political secession of South Sudan in 2011, also landlocked, has resulted in a shaky reliance on Sudan for the only pipeline routes to international markets.

This paper examines the development, potential, and main risks facing oil industries in Uganda, Kenya, and South Sudan, as well as plans for regional pipelines in East Africa. It begins in Uganda, the future anchor of the region's oil production, where the development of oil first discovered in 2006 has only recently moved past a number of tax, regulatory, and contract disputes between the Ugandan government and international oil companies. Second, it reviews Kenya's oil industry, in which political struggles over oil between local communities, country representatives and national leaders remains acute. Third, the paper examines South Sudan's oil industry since its 2011 independence, and how regional disputes and conflict with Sudan over pipeline transit fees, and the outbreak of civil war in late 2013, have slowed production in an already ageing oil industry. Finally, the paper details and examines the shifting positions the region's governments and international oil companies have taken on developing critical new pipelines in East Africa, and the merits and challenges of different possible routes.

II. Uganda

Uganda is the backbone of East Africa's oil future. Oil finds in the landlocked East African country were some of the largest onshore discoveries on the continent in over two decades. Since the initial 2006 discovery, however, Uganda has struggled to reach first oil. An acrimonious relationship between international oil companies and the Ugandan government, mostly over tax and contractual disputes, slowed development for several years following the discoveries. Since the fall of global oil prices in mid-2014, most of those disputes between the two sides have been settled. That has established a foundation for a strong consensus around exploiting the majority of Uganda's oil through an export pipeline, as opposed to initial government plans to build a large domestic refinery. In August 2016, long delayed production licenses were signed with international oil companies, opening the way for first oil exports in the coming 3-5 years pending the completion of a regional pipeline.

¹ Yadullah Hussain, 'Canada's Africa Oil Corp. sees promise in Kenya', *Financial Post*, 24 October 2013.



Oil sector

The scale of Uganda's oil resources, and East Africa's more broadly, aren't on the same scale as West Africa's powerhouses Nigeria and Angola, which still account for the vast majority of reserves and production. But Uganda has the potential to be central to oil production in East Africa. It has an estimated 6.5 billion barrels of oil in place with recoverable oil between 1.8 and 2.2 billion barrels.² Based on current discoveries, oil production is expected to reach a 10-year plateau of between 200,000 and 250,000 b/d over a three-decade lifespan of output.³ These levels are comparable to present day mid-level African producers, South Sudan, Equatorial Guinea and Gabon, which will likely decline in production in the coming years, making Uganda the third largest oil producer in sub-Saharan Africa.

Uganda's main concessions run across a narrow but long north-south track of territory on the eastern shores of Lake Albert on the border with the Democratic Republic of Congo. In the late 1990s and early 2000s, despite low oil prices at the time, and operational and security challenges, Uganda was able to attract wildcatter oil companies to prospect deep inland. This was possible due to the growth of the oil industry in neighbouring southern Sudan, technological advances lowering the costs associated with onshore drilling, and tax exemptions offered by Uganda's former minister of energy. The British firm Heritage Oil, Hardman Resources from Australia, and South Africa's Energy Africa were the initial investors.

The gradual uptick in global oil prices over the coming decade drew in further exploration interest. In 2004, Tullow entered Uganda after buying Energy Africa, which held stakes alongside Heritage and Hardman in key concessional areas on Lake Albert.⁴ Tullow went on to purchase Hardman two years later, increasing its interests in Uganda even further. Months before the takeover, Hardman became the first to discover oil in Uganda, with Heritage also having success, making 2006 a breakout year.⁵ As further discoveries were made, and oil prices continued to rise, oil majors and national oil companies began to take notice of Uganda.

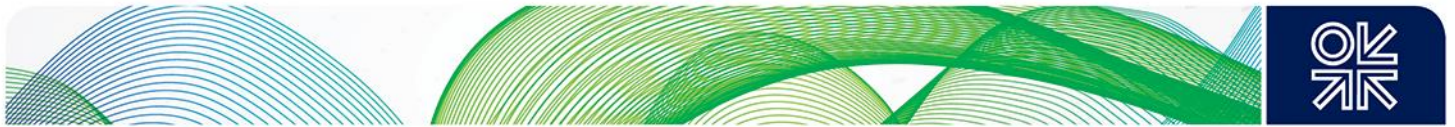
In 2009, Heritage attempted to sell its 50 per cent stake in two main concessions to the Italian oil major ENI for \$1.45 billion, but Tullow invoked its contractual pre-emptive rights to buy the assets, giving it full operatorship of Uganda's four main oil-holding concessions. In early 2010, Tullow announced its intention to sell a two-thirds stake in Blocks 1, 1A, 2, and 3A for \$2.9 billion in equal shares to the French oil major Total and China National Offshore Oil Corporation (CNOOC). Total, in particular, possessed the size and expertise in mid and downstream operations to manage long-term production that Tullow lacked.

² 'Delivery of the Uganda Lake Albert Basin Development: Partner's Vision', Corporate Presentation, CNOOC, Total, Tullow Oil, Kampala, Uganda, 2014, 3 and 6; Ronald Musoke, 'Uganda's oil reserves now estimated at 6.5 billion barrels', *The Independent*, 28 August 2014.

³ Nicholas Bariyo, 'Total sees Uganda oil output delayed by a year', *The Wall Street Journal*, 28 September 2012; 'Delivery of the Uganda Lake Albert Basin Development: Partner's Vision', Corporate Presentation, CNOOC, Total, Tullow Oil, Kampala, Uganda, 2014, 3 and 6.

⁴ 'Creating shared prosperity in Uganda', Tullow Uganda Country Report, Tullow Oil, London, 2013, 4–6.

⁵ 'Untapped oil frontier: Hunting elephants in East Africa', *Cormark Securities Inc.*, 3 February 2011, 37–8.



Map 1: Uganda main concessions and oilfields

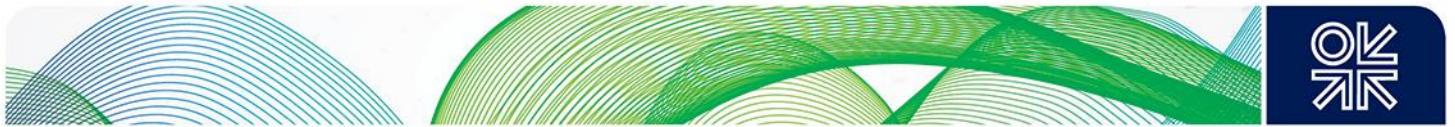


Source: Tullow Oil

But it was not until early 2012 when the Tullow farm down to Total and CNOOC received government approval. This was followed by another long delay in the awarding of production licenses to both Total and Tullow (CNOOC received its production license in 2013), which had divided operatorships across Uganda's oil-bearing concessions. These delays, the finalisation of appraisal work, and the fall in global oil prices in mid-2014, resulted in a substantial decrease in activities preparing Uganda's oil industry for first production.

But a breakthrough occurred in August 2016 when Uganda finally signed production licenses with Total and Tullow. The agreement established an 18-month deadline for the companies to reach a final investment decision and begin development of the oilfields with a goal of first oil in 2020.⁶ In another important development, Tullow announced a further farm down of its Uganda assets in early 2017 to

⁶ It also established unitisation of oilfields that straddled different license areas, a key sticking point between the two sides. It is expected that the Uganda National Oil Company will take a 15% stake in the concessions with its costs to be carried by consortium partners until production; Frederic Musisi & Mark Keith Muhumuza, 'Shs27 trillion needed to see first oil', *Daily Nation*, 31 August 2016.



Total for \$900 million. Burdened by high debt levels, Tullow offered the French oil major 21.57 per cent of its 33% stake in the venture.⁷ CNOOC has announced interest in using its pre-emption rights to acquire part of the sale, but pending government approval, it will be Total that likely takes over operatorship of Block 2. Tullow will use most of the proceeds from the sale to cover the development costs associated with its reduced stake.⁸

It is expected that upstream development will require \$8 billion in investment by the consortium. According to estimates of a Joint Technical Team of Uganda and licensed upstream oil companies (Total, CNOOC, and Tullow), the planned 1,443km pipeline from the oilfields to the Tanzanian port of Tanga will cost another \$3.9 billion. As Ugandan oil has high wax content, pipelines and storage facilities will need to be heated to reduce viscosity.⁹ Ugandan oil officials argue that the breakeven price per barrel for development plans is between \$50 and \$60.¹⁰ They remain keen on fulfilling the ambitious goal of reaching first oil by the end of 2020.

Risk

It was only a few years after oil was discovered in Uganda when a number of regulatory, tax, and contract disputes between the Ugandan government and international oil companies stalled the advancement of the oil industry. While onshore discoveries in frontier territories like Uganda can generally take 10 years from discovery to first oil, these delays have made progress even slower.

First, President Yoweri Museveni decided that Uganda's oil production should be used to supply a 150,000 b/d refinery to service Uganda and the region's fuel consumption needs.¹¹ Uganda does have a strategic interest in developing a refinery to lower its import bill and break its dependence on Kenya as the main source for petroleum products. But in light of the fall in global oil prices and Uganda's mounting debt levels, the economic challenge of such a large project has become increasingly apparent. In early 2014, the government relented in its demand for a large refinery, and signed a memorandum of understanding with Total, Tullow and CNOOC that an export pipeline could be built for the majority of Uganda's oil production.

Uganda still seeks to build a smaller refinery at a cost of \$2.5 billion refinery, and it was successful in ensuring it would have first call on oil output, with an initial capacity of 30,000 b/d, scalable up to 60,000 b/d.¹² But even the smaller refinery has found few interested investors: first Russia's RT Global Resources, and then SK Energy from South Korea, pulled out. Uganda continues to seek interest among regional governments and international oil companies,¹³ but overall, the centrality of developing the refinery has given way to the priority of developing a regional pipeline and generating export revenues.

Capital gains tax disputes have also been a major point of friction between the Ugandan government and international oil companies. Beginning with the profits earned from Heritage's sale of its interests to Tullow in 2009, followed by Tullow's farm down to Total and CNOOC in 2012, tax rows dragged on through Ugandan and international courts for six years until they were settled in 2015.¹⁴ Moving

⁷ Nathalie Thomas, 'Total ups stake in Uganda oil project via \$900m deal with UK's Tullow', *Financial Times*, 9 January 2017.

⁸ Tullow also made a commitment to Uganda to invest in 10% of the regional pipeline.

⁹ 'Creating Shared Prosperity in Uganda', Tullow Uganda Country Report, Tullow Oil, London, 2013, 6.

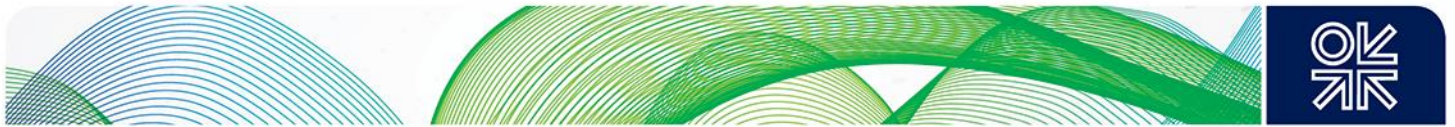
¹⁰ 'Tullow trouble for Uganda', *The Independent*, 22 February 2015.

¹¹ 'The competition heats up', *Africa Confidential*, Vol. 49, No. 14, 4 July 2008; Esther Nakkazi, 'Swiss study urges Uganda to build oil refinery', *The East African*, 18 October 2010; 'Oil in Uganda Timeline', *Oil in Uganda*, Issue 1, 2012, 12.

¹² Nicholas Bariyo, 'Uganda Reaches Deal on Refinery, Pipeline', *The Wall Street Journal*, 15 April 2013; 'Uganda', US Energy Information Agency, Country Analysis Note, August 2014.

¹³ Joseph Burite & Fred Ojambo, 'Uganda says Total will take stake in planned oil refinery', *Bloomberg*, 27 October 2016.

¹⁴ The dispute centred on whether Heritage and Tullow were exempted from capital gains taxes after signing an agreement with a former energy minister. Uganda argued that only parliament could award such privileges, and after long court proceedings with Heritage, which in a last-minute attempt tried to avoid paying taxes by re-domiciling the company to Mauritius, won the \$400 million ruling. It later settled in its dispute with Tullow for \$250 million; Michael Kavanagh, 'Heritage plays down ruling on Uganda oil asset sale', *Financial Times*, 5 April 2013; 'Tullow to challenge Ugandan court order to pay \$407 mln tax bill',



forward, a key test will be whether the government and companies have moved past their differences on capital gains tax in light of Tullow's 2017 farm down to Total. Tullow claims no profit on the \$900 million sale, but still awaits government approval of the deal.

But arguably the longest setback for the advancement of Uganda's oil industry has been protracted negotiations between the government and international oil companies on the terms of production licenses for Total and Tullow.¹⁵ Long negotiations repeatedly pushed back starting dates for planning midstream development and executing the final investment decision. After some two years of intermittent discussions, the licenses for Total and Tullow were finally granted in August 2016.¹⁶ Although it was a protracted process, the direct involvement of President Museveni in negotiations with international oil companies, as well as the technical and bureaucratic capacity of leading Ugandan officials, did pay dividends, and Uganda stands out among its East African neighbours.¹⁷ Notwithstanding social and environmental issues, Uganda's production sharing agreements have financial terms that are relatively strong in the government's favour.¹⁸

But Uganda's hard bargaining has also clearly slowed down the speed of development for the oil industry. And while the Ugandan government has proven willing to stomach delays, it has in time, also offered concessions to its earlier positions with international oil companies. The long process also demonstrates that there remains a lack of expertise in the government beyond the exploration stage of the industry.¹⁹ Nonetheless, in the short term, while no oil company investing in Uganda should ignore the history of disputes with the government, most have been resolved, and there is renewed confidence for Uganda's oil industry to move ahead to first oil.

As Uganda moves towards first oil through the development of a major regional pipeline, new risk could emit from the process of political succession in the mid to long run. President Museveni was reelected in 2016, extending his 30-year rule to 2021. Whether the 71-year old will seek another term, closely timed with the planned completion of a regional oil pipeline, remains an open question. In any case, the multi-decade lifespan of the oil industry in Uganda will at some point witness a transition of political power. It is unlikely that a future leader, whether it is Muhoozi Kainerugaba, Museveni's son, who is touted to be his successor and recently was appointed by his father as presidential advisor, or a figure from the ruling National Resistance Movement, or even someone from the political opposition, will heavily interfere in the competitive agreements Uganda has signed with international oil companies.

What is less certain is whether the process of succession will be a stable one. Post-Museveni Uganda remains a big unknown. Recent fighting between government security forces and the royal guards of the Rwenzururu kingdom demonstrate internal conflict is still an acute concern as fault lines within the

Reuters, 16 July 2014; Jeff Mbanga, 'Questions as Tullow settles \$250 tax row', *The Observer*, 24 June 2015; Rob Wilson, 'Panama Papers: How Jersey-based oil firm avoided taxes in Uganda', *BBC*, 8 April 2016.

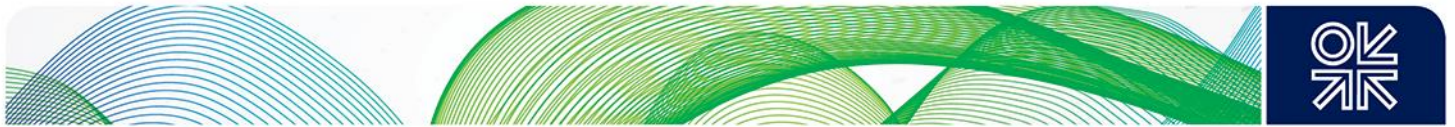
¹⁵ Among other points of disagreement, the negotiations centred on the demand of the oil consortium for an integrated basin-wide development programme, to share costs between concessions, particularly Total and Tullow's Blocks 1A and 2, where the Ngege oilfield overlapped the concession areas. The basin-wide approach would have allowed the companies to recover investments at a faster pace, but the Ugandan government sought to divide the operatorships and regulate the companies individually to secure better terms; Isaac Imaka and Frederic Musisi, 'Government to announce oil refinery investor', *The Daily Monitor*, 25 February 2014.

¹⁶ Uganda was able to ensure a basin-wide approach was applicable across all concessions, but the unitisation of the Ngege field was allowed; Frederic Musisi & Mark Keith Muhumuza, 'Shs27 trillion needed to see first oil', *Daily Nation*, 31 August 2016.

¹⁷ Sam Hickey & Angelo Izama, 'The Politics of governing oil in Uganda: Going against the grain?', *African Affairs*, Vol. 115, No. 461, 2016.

¹⁸ Global Witness, 'A good deal better? Uganda's secret oil contracts explained', September 2014.

¹⁹ Senior officials at the Petroleum Exploration Production Department of the Ministry of Energy and Mining Development are trained as geologists.



ruling NRM and army widen with Museveni's once strong grip on power waning.²⁰ The process of succession could be violent, with Uganda's growing debt problems from large-scale infrastructure initiatives, which have been reportedly partially bank-rolled by future oil revenues, fuelling any instability by constraining the government's financial flexibility.²¹ For the present, however, the largest challenge preventing large-scale production and export of Ugandan oil by early next decade is ensuring the development of a regional pipeline through neighbouring Tanzania or Kenya.

III. Kenya

Kenya's oil industry is still in its infancy. Its first discovery came in March 2012. The steep fall in global oil prices, and scuttled plans for a joint regional pipeline with neighboring Uganda, has since dampened initial rosy prospects, putting its potential as a future energy transport hub for East Africa in doubt.

Oil sector

Ten years of sustained high oil prices between 2004 and 2014, and regional successes in Uganda's 2006 onshore oil finds and Tanzania's offshore gas discoveries, attracted an assortment of oil companies to explore for oil and gas in Kenya. The London-based and Africa-focused independent, Tullow Oil, has had the biggest impact. Tullow entered Kenya in 2010 by purchasing a 50 per cent stake in five onshore licenses wholly owned by the smaller-sized Canadian exploration company Africa Oil. Tullow went on to make a string of discoveries in Block 10BA and Block 13T, beginning with the estimated 300 million-barrel Ngamia oilfield. While other companies have engaged in exploration work throughout much of the country, including offshore, oil finds to date have been limited to Tullow and Africa Oil's concessions in the northwestern region of Turkana County.

Since the fall in global oil prices in mid-2014, however, exploration activity in Kenya has slowed significantly. A number of companies have withdrawn from operations and relinquished their interests. Tullow has scaled-back its exploration plans, lowering active rigs from four to one and slashing operational expenses as part of a company-wide cost restructuring.²² But the discoveries in Kenya still have potential for further development. One of the most significant changes in Kenya's oil industry in recent years was the sale by Africa Oil of a 25% interest stake in Blocks 10BB and 13T, among others in Kenya and Ethiopia, to Maersk Oil and Gas in November 2015.²³ Africa Oil made the sale from a position of weakness as the company was struggling to maintain its financial commitment to appraisal and development work. But the entry of Maersk also underlined the attractiveness of low-cost, onshore production that Kenya offered in the global oil industry.

²⁰ Personal communication, oil industry to East Africa, 5 March 2017.

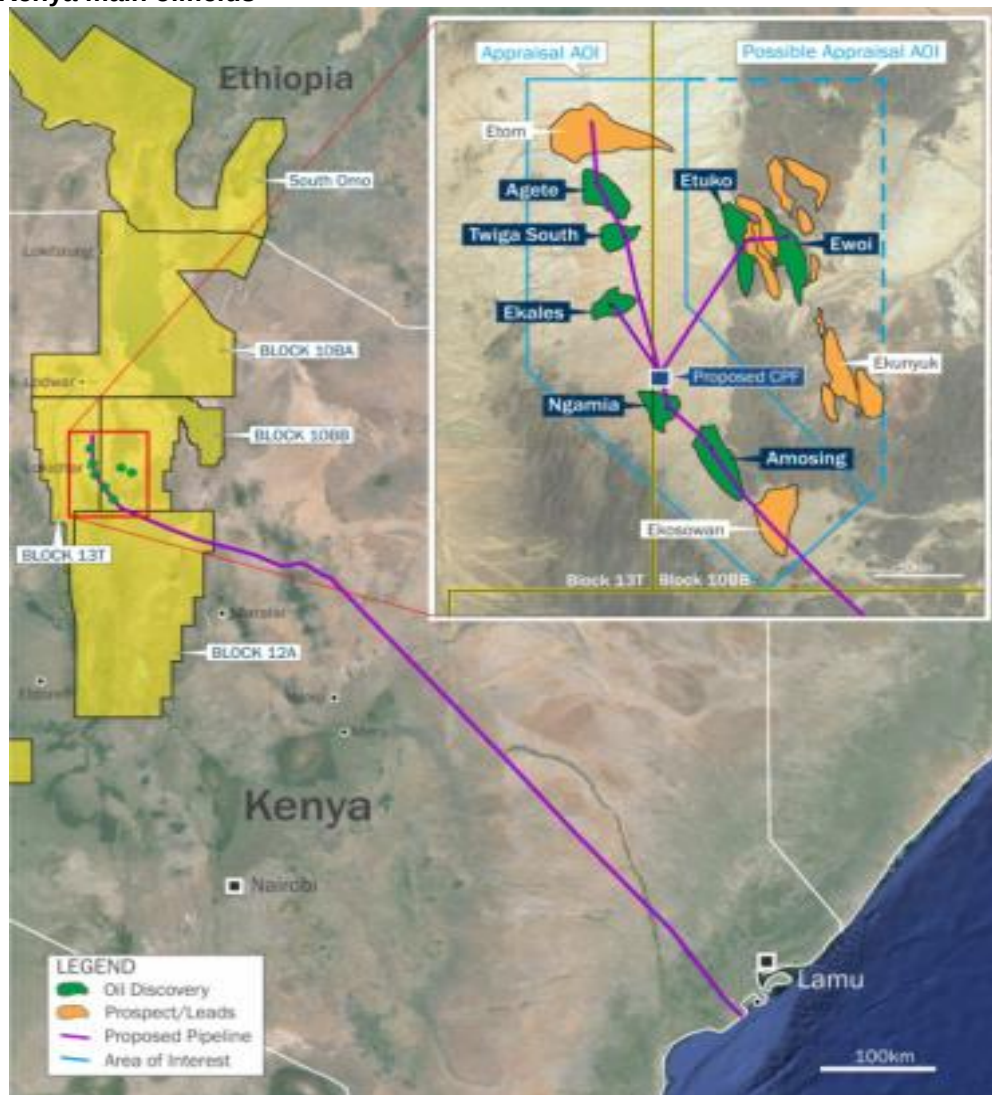
²¹ Elias Biryabarema, 'Uganda central bank warns of 'debt distress' if oil revenues delayed', 20 July 2016.

²² Reacting to the decrease interest from oil companies, the Kenyan government put a freeze on new exploration licenses in late 2015; Stephan Mudiari, 'Sharp drop in crude prices busts Kenya's oil sector boom', 6 October 2015.

²³ The International Finance Corporation (IFC) also made a \$50 million equity subscription with Africa Oil in 2015.



Map 2: Kenya main oilfields

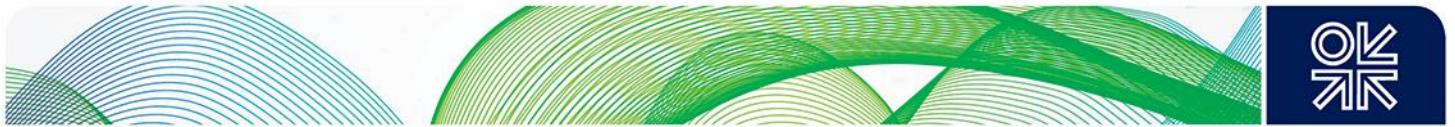


Source: Tullow Oil

Despite the fall in global oil prices slowing industry activity since mid-2014, there have been marginal gains in development and exploration work. Estimates of gross recoverable barrels in contingent oil resources have risen from 600 to 750 million (with an upside of 1 billion barrels) in Blocks 10BB and 13T within the South Lokichar sub-basin. Tullow's exploration wells Etom-1 and Etom-2 hit oil in mid-2014 and late 2015 respectively, and more recently, Eruit-1, drilled in early 2017, was the most northerly discovery yet in Block 13T.²⁴

While there remains considerable potential in growing the upstream sector through new exploration, without future discoveries, Kenya will only become a small African oil producer with future targeted production between 80,000-120,000 b/d. In an optimistic estimate, likely to attract investors, Tullow

²⁴ There have also been setbacks. Emesek-1, also drilled by Tullow in 13T, proved unsuccessful; Louise Kelly, "Exciting discovery' for Tullow as oil found at well in northern Kenya", *Independent*, 17 January 2017; Tullow Oil, 'Well update – Kenya', Press Release, 15 November 2015, <http://www.tullowoil.com/media/press-releases/well-update---kenya-Nov-2015>, 30 January 2017.



calculated a breakeven point of \$25-30 per barrel to carry out development and production.²⁵ Analysis that includes the likely high discount of Kenyan crude to the Brent crude benchmark suggests a breakeven of \$42 per barrel.²⁶ This is still below the \$47 per barrel average in oil prices during 2015 and 2016, but far off previous prices of over \$100 per barrel from which exploration companies originally aspired to profit.

To monetise Kenya's oil resources, an 850-kilometre pipeline and supporting infrastructure from the remote and underdeveloped Turkana region to the Indian Ocean coast must be built. Similar to Uganda's crude oil, Kenya's is medium light, between 25 and 35 degrees API, and waxy, demanding that the pipeline be heated to avoid congealing. The pipeline from Turkana and export port development at Lamu on the Kenyan coast will cost around \$3 billion, while \$5-8 billion is needed for upstream development costs.²⁷ But with regional financing for infrastructure in East Africa increasingly competitive in a lower oil price climate, there are growing questions if two parallel pipelines, one in Kenya, and another from Uganda to Tanzania, are possible.

The development costs to develop Kenya's oil industry are considerable for the current partners Tullow, Africa Oil, and Maersk. Considering difficulties in attracting large-scale financing in the lower oil price environment, new partners, with larger capital capacities, would give the venture a significant boost towards first oil. In addition to a possible further farm down from Africa Oil, Tullow will also likely look for buyers of its interests. The British company announced renewed dedication to its Kenya assets after its Uganda farm-down in January 2017. The announcement of a new stock rights issue will help the company shed some of its large debt burden, but if oil prices don't rise in the next few years, a sale in Kenya may be unavoidable.

Equally concerning is the ability of Tullow to manage such a large-scale oil project and the political and regulatory risks it entails in Kenya's upstart oil industry.²⁸ Even before the fall in global oil prices, Tullow was struggling with its efforts to progress oil finds in its portfolio into producing assets.²⁹ Tullow's offshore oilfields in Ghana faced technical difficulties, lowering production, and regulatory disputes in Uganda have been another costly delay for the company. In Kenya, Tullow expects a final investment decision in 2018, but such plans have slipped on numerous occasions, and are now already several years behind schedule.³⁰ While Kenya's still unfinished oil legislation does not help matters, Tullow's inexperience in managing complex onshore oilfield development projects may very well slow progress further.

Another farm down in Kenya from Africa Oil, or one from Tullow, potentially to bring in a new or joint operator, or at least financial muscle, may be in store in the coming years. This will likely not take place until Tullow is finished with de-risking Turkana's oil resources and a joint development agreement is made with the Kenyan government, but potential candidates to farm into Tullow's Kenya assets include Total, CNOOC – both with experience in Kenya – along with other investors looking for potential growth opportunities in East Africa.³¹ It will not be until next decade at the earliest until Kenya becomes a large-scale oil exporter.

²⁵ Tullow Oil, 'Overview Presentation', January 2017, p. 19.

²⁶ 'Potential Government Revenues from Turkana Oil', Kenya Civil Society Platform on Oil and Gas, April 2016, p. 19.

²⁷ An oil pipeline and export terminal have become central to any traction on Kenya advancing its ambitious \$25 billion infrastructure venture, the Lamu Port, South Sudan, Ethiopia, Transport (LAPSSET) Corridor, which has been severely hampered by long delays and a lack of financiers; Adrian J. Browne, 'LAPSSET: The history and politics of an eastern African megaproject', *Rift Valley Institute*, 2015; Katharine Houreld, 'Kenya oil official sees break-even price at \$50-55 per barrel', *Reuters*, 7 October 2016.

²⁸ 'Dar wins from regional shift', *Africa confidential*, Vol. 57, No. 21, 21 October 2016.

²⁹ After the fall in global oil prices, Tullow's market capitalization fell from \$11 billion in 2011 to \$4.4 billion in late 2014; Michael Kavanagh, 'Tullow Oil to slash exploration budget', *Financial Times*, 12 November 2014; Mark Keith Muhumuza, 'Uganda: Is Tullow's 12-Year Adventure in Uganda's Oil Sector Ending?', *The Daily Monitor*, 18 January 2017.

³⁰ Tullow, 'Operational Update – Kenya', Press Release, 15 January 2014; Tullow Oil, 'Overview Presentation', January 2017, p. 19.

³¹ A complete takeover of Tullow is another possibility.



Risk

The overarching risk facing Kenya's oil industry is how the devolution process, established in the 2010 constitution, of transferring political power and economic resources from the central government to the county level is implemented. This presents challenges to the oil industry, particularly in Turkana County, as political representatives at the national, county, and sub-county level, wrestle to control new resources, including business engagement with the oil industry and future oil revenues. If Kenya is to go it alone with financing and building an oil pipeline, or orchestrate a joint pipeline with a regional partner, it will need to calm concerns associated with high in-country political and security risk.

Unlike Uganda, where the oil industry has faced hard bargaining over financial and regulatory issues, Kenya's central government has been relatively supportive to international oil companies. President Uhuru Kenyatta has been eager to demonstrate advancements in the oil industry before the 2017 national election, including pushing forward an early oil production scheme. But as exploration companies Tullow and Africa Oil look to attract larger partners to invest in and develop Kenya's oil resources, the long-term perspective of how political relations within and between Turkana and central authorities will develop becomes critical.

Grievances among the local communities and political representatives have already constrained oil operations in Turkana, and may very likely do so again in the future. In late October 2013, Tullow suspended its operations in Block 10BB and 13T for several weeks in the face of demonstrations by hundreds of local residents over a lack of employment and business opportunities.³²

Tullow responded to the 2013 shutdown by renewing its commitment to community engagement through increasing social investment, local hires, and tendering.³³ But its actions increased the economic value of political positions in Turkana and demonstrated the ability of local political representatives to control community-company relations in order to selectively distribute employment and tender opportunities.³⁴ Future elected parliamentarians will likely expect similar opportunities from the oil industry for their supporters and businesses, opening up competition with outgoing political representatives who are already embedded in transport and labour supply chains.³⁵

Since 2015, Tullow has developed a new approach to community engagement. It has moved away from a transactional approach with local politicians towards more comprehensive stakeholder engagement to address grievances in local communities.³⁶ But whether its efforts will continue in the long run, and can overcome local power structures 'to recalibrate the industry's unhealthy relationship with local government', is yet to be seen.³⁷ In Turkana, managing expectations of fast growth and development from oil will be a challenge in light of the relatively small size of the discoveries to date.

The early oil scheme to truck and rail 2,000 b/d from Turkana to Mombasa before the 2017 elections may backfire on the ruling Jubilee alliance.³⁸ While President Kenyatta wants to demonstrate success in the oil industry during his first term, the small revenues (if not losses) from initial oil sales may only

³² Members of parliament representing Turkana South and Turkana East, the two oil-bearing sub-counties, motivated residents to shut down the industry. Each was dissatisfied with their access to employment and tenders from international oil companies and subcontractors; Sammy Lutta & Bernard Namunene, 'Oil drilling halted', *Daily Nation*, 27 October 2013; Lucas Ngaasike, 'Tullow Oil suspends operations over conflict with locals', *The Standard*, 28 October 2013.

³³ 'Setting the Agenda for the Development of Kenya's Oil and Gas Resources – The Perspectives of Civil Society', Kenya Civil Society Platform on Oil and Gas (KCSPOG), Nairobi, July 2014, 53; 'Tullow Oil, Annual Report 2013', Tullow Oil, London, 2014, 27.

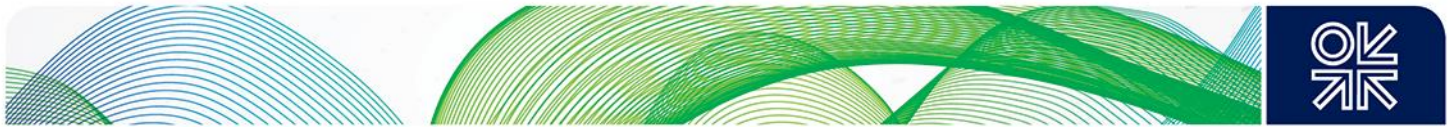
³⁴ Kennedy Mkuu & Gerard Wandera, 'Conflict, Security and the Extractive Industries in Turkana, Kenya: Emerging Issues 2012-2015', United States International University-Africa and Kenya School of Government, 2016, p. 2.

³⁵ Personal communication, oil consultant working in East Africa, 9 October 2014.

³⁶ 'Oil exploration in Kenya: Success Requires Consultation', Cordaid, August 2015, pp. 23-4.

³⁷ Interview, Leading Kenyan civil society representative, 9 August 2016.

³⁸ 'Early oil from Turkana: Marginal benefits / unacknowledged costs', Kenya Civil Society Platform on Oil and Gas, Nairobi, October 2016.



enflame grievances in local communities over the lack of jobs and development in the region, where there is already high-levels of inter-communal violence over land and resources.³⁹ It is a dangerous gamble for the Kenyan government and international oil companies, as most investors have a low threshold for violence.⁴⁰ A significant attack on oil operations could derail advancement in Kenya's oil industry even further.

There are also divisions between the national-local government that warrant attention. Oil companies did not enter a blank slate in Turkana, where divisions over the neglect of the region by the political centre have long existed, and have now manifested again over oil. Throughout 2016, the Turkana South and East MPs threatened to block oil drilling and the construction of a pipeline should government development plans for the region not move forward.⁴¹ The current governor of Turkana, a member of the opposition party, and Turkana MPs, some from the ruling Jubilee alliance, have also protested against President Kenyatta's refusal to assent a draft of the Petroleum bill that allocated 20% of future oil revenues to producing counties, and 10% to local communities.⁴² Left unresolved, this national-county divide, related to the wider devolution process, threatens to stall the advancement of the oil industry further. Very fluid political dynamics in Kenya, particularly around election cycles, have the potential to disrupt the industry again, and repeatedly so, in the future.

IV. South Sudan

South Sudan's oil industry has been severely handicapped by political intervention and armed conflict since independence more than five years ago. When it broke off from Sudan in July 2011, South Sudan took control of three-quarters of the once united country's oil resources, some 325,000 b/d in production and 3.5 billion barrels in reserves. But South Sudan was inheriting an ageing oil industry. Production was already declining sharply before South Sudan's independence from Sudan. The South Sudanese government's decision to shut down the industry in January 2012 for a 15-month period because of a conflict with Sudan over pipeline transit fees has only undermined the industry further. South Sudan relies completely on a pipeline running through Sudan to get its oil to international markets. The outbreak of civil war in December 2013 closed some oilfields yet again, precipitating the industry's decline.

Oil sector

The fundamental problem facing South Sudan's oil industry are its maturing oilfields in Unity state and Upper Nile state.⁴³ In Unity state, after some two decades in production, the Nile blend crude from Block 1 in South Sudan, as well as Blocks 2 and 4 in Sudan, reached peak production in 2004.⁴⁴ While farther south, the Thar Jath and Mala oilfields in Block 5A can technically fill some of the production gap, output of the fields' poor quality crude has been limited in order maintain the value of

³⁹ Interview, international oil company active in East Africa, 12 July 2016.

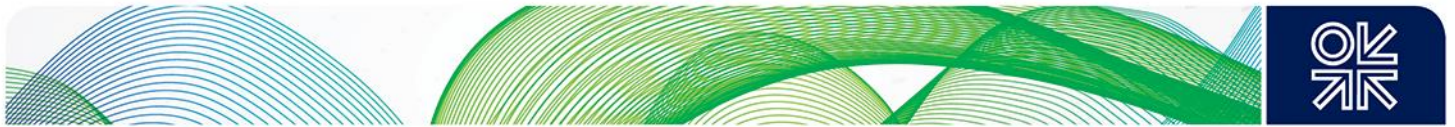
⁴⁰ Interviews, international oil companies active in East Africa, 24 April 2015 & 14 December 2016.

⁴¹ One demand was that locals (likely companies affiliated with the political representatives) receive a share of trucking contracts in the early oil scheme; Alphonse Shiundu, 'Turkana MPs vow to block oil drilling, pipeline until Government honours pledges', *The Standard*, 23 March 2016; Lucas Ngasike, 'No road, no oil, Turkana leaders threaten', *The Standard*, 1 July 2016; Kennedy Senelwa, 'Row brewing over how oil revenue from Turkana basin will be shared', *The East African*, 3 January 2017.

⁴² Kenyatta recommended capping the county share according to national levels and reducing the share for local communities to 5%.

⁴³ In late 2015, South Sudan's 10 states were divided into 28 states and 180 counties by presidential decree. This resulted in borders placing key oil areas in stronger control of the ruling Dinka ethnic group from which President Salva Kiir hails. Oilfields once in Unity state are now in Ruweng and Northern Liech state, and those previously in Upper Nile state, are in Eastern Nile state; See Douglas H. Johnson, 'Brief analysis of the boundaries of the 28 states', Centre for Peace and Development Studies, University of Juba, 2015;

⁴⁴ Seven years later, shortly before South Sudan's separation, output levels had fallen by more than half to 125,000 b/d.



the Nile blend, which trades at a small discount to the global benchmark Brent crude.⁴⁵ In 2006, oil from Block 3 and 7 in Upper Nile state first helped to maintain plateau production of above 400,000 b/d in Sudan, and after South Sudan's independence in 2011, made-up the lion's share of the new country's oil output. But not only did this production reach a peak in 2010, oil from Upper Nile state, the Dar blend, is of low quality, typically selling at a large discount to the Brent benchmark.⁴⁶

Without investments in enhanced oil recovery or significant new discoveries, South Sudan's oil production will fall below 100,000 b/d before 2030.⁴⁷ Natural decline, a lack of manpower in South Sudan to manage the industry after secession, and Sudan's frequent closure of the border, which forces South Sudan to procure key machinery and parts from the distant and difficult to access Kenyan port of Mombasa, have all accelerated the decline in production. At first the uncertain political future of South Sudan's separation, particularly regarding concessional rights and the use of Sudan's main oil pipelines, discouraged the trio of Asian national oil companies jointly operating the industry, China National Petroleum Corporation (CNPC), Petronas from Malaysia, and India's Oil and Natural Gas Corporation Videsh, from making much needed investments. Later, in the wake of South Sudan's civil war and economic crisis, rather than sharing in a profitable oil industry, the Asian national oil companies have unwittingly become key sources of finance for South Sudan's government.⁴⁸ Government demands for loans do little to improve the incentive of the Asian oil firms to invest with a long-term perspective.

Enhanced oil recovery investments, through chemical and gas injection, have potential to raise production. One Norwegian study estimates that average recovery rates in some Unity state oilfields in Sudan and South Sudan could be increased from 23% to above 30%, but hundreds of millions of dollars in frontloaded investments are required.⁴⁹ Sudan has piloted efforts to improve recovery rates, and the provisional lifting of longstanding US sanctions in early 2017 may help this process, but similar plans in South Sudan have been stalled by the civil war.⁵⁰

Another avenue to revive South Sudan's production levels is through new oil discoveries. Existing producing concessions have seen some exploration activity in the past decade, but prospects remain low for significant new finds. The biggest opportunity for new oil lies in Jonglei state. Although the probability of a major find in Jonglei is estimated to be between 10-20%,⁵¹ South Sudanese officials remain confident that the area is oil-rich. There are significant challenges to overcome for would-be wildcatters. Jonglei is a large, isolated, undeveloped, and instable state, which was a flashpoint for violence at the beginning of South Sudan's civil war. It lacks supporting infrastructure for oil

⁴⁵ As Block 1, 2 and 4 continue to fall in production, however, the quality level of the Nile blend will likely decrease, and a higher discount to global oil prices should be expected; Laura M. James, 'Fields of Control: Oil and (In)security in Sudan and South Sudan', Small Arms Survey, HSBA Working Paper 40, 2015, p. 27.

⁴⁶ Its heavy, waxy and acidic crude requires heating to avoid congealing during the 1,370 km trip through Sudan's second major pipeline.

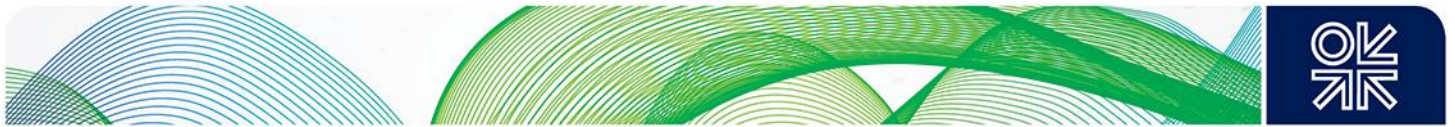
⁴⁷ To make matters worse for the South Sudan government, which is almost entirely dependent on oil for government revenues, falling oil production since independence has coincided with the sharp drop in global oil prices since 2014. Lower prices have a disproportionately negative impact on government oil revenues because 'cost oil' claimed by the oil consortia takes a larger part of total earnings, and at the same time, the Dar blend tends to sell at a higher discount to the Brent global benchmark when global oil prices are lower; Laura M. James, 'Fields of Control: Oil and (In) security in Sudan and South Sudan', Small Arms Survey, HSBA Working Paper 40, 2015, p. 26.

⁴⁸ The economic crisis due the decline of oil revenues during the conflict, which make up the vast majority of South Sudan's earnings, has resulted in the South Sudanese government borrowing heavily from Chinese, Malaysia, and Indian national oil companies. After providing some \$1.6 billion in oil-backed emergency loans, the oil companies elected to rebuff new lending requests in 2015 due to concerns with repayment; Nicholas Bariyo, 'South Sudan's Debt Rises as Oil Ebbs', *Wall Street Journal*, 5 August 2014; 'South Sudan's loan requests to oil companies rebuffed', *Radio Tamazuj*, 25 August 2015.

⁴⁹ 'Sudan', Norwegian Petroleum Directorate, <http://www.npd.no/en/publications/reports/oil-for-development-2010/ofd-projects-core-countries/sudan/> accessed 13 February 2017; 'Sudan works with CNPC, Petronas on oil extraction', *Reuters*, 28 September 2010.

⁵⁰ Some oil wells closed during the 2012 shutdown were deemed uneconomical to reopen due to a lack of natural pressure levels.

⁵¹ Laura M. James, 'Fields of Control: Oil and (In) security in Sudan and South Sudan', Small Arms Survey, HSBA Working Paper 40, 2015, p. 28.

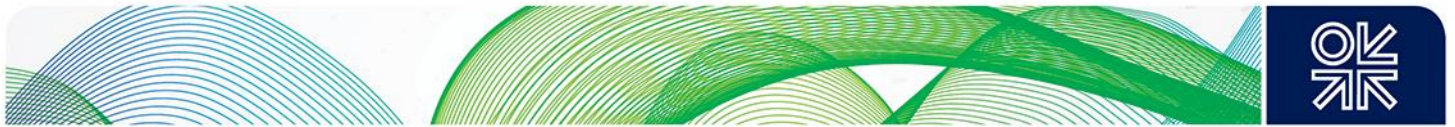


exploration and has a long annual rainy season that slows road transportation of heavy equipment to a near standstill.

Map 3: Sudan and South Sudan main oilfields and pipelines



Source: Luke Patey, *The New Kings of Crude: China, India, and the global struggle for oil in Sudan and South Sudan*, Hurst Publishers, London 2014.



The French oil major Total has for decades been interested in exploring for oil in Jonglei. But South Sudan's 2011 independence frustrated these plans. In 2012, South Sudan divided the once 118,000 square km concession in the state, Block B, into three different blocks.⁵² Total is still well placed to access the two most prospective blocks, and has kept negotiations ongoing with the South Sudanese government, but security concerns, even before the civil war, and a failure to sign an exploration and production sharing agreement, has stalled activities.⁵³ The industry as a whole will need to first rebound before Jonglei becomes a viable prospect.

In the long term, a potential new regional pipeline in East Africa may open new alternatives to South Sudan. In March 2013, South Sudan commissioned a feasibility study on the possibility of developing an alternative pipeline to the Kenyan coast as well as one through Ethiopia to Djibouti.⁵⁴ But even with a period of stability and significant new discoveries by Total or others in Jonglei, the existing Sudan pipelines represent the most feasible economic options for new oil to reach international markets. Infrastructure advances in Uganda and the development of Kenya's oil resources present the possibility for a 700-900km spur line to transport any possible new oil from Jonglei state to production facilities near Hoima or Lokichar. However, in all likelihood, with production from existing oilfields sharply declining in the coming decade, and political and security risks still rife, South Sudan will slowly fade from East Africa's oil picture.

Risk

South Sudan's ongoing civil war and its future relations with Sudan around the use of its pipeline infrastructure represent the largest risks facing the oil industry in the coming years. Between 2012 and 2015, the combination of armed conflict and political intervention in South Sudan pushed average oil production down to just 108,500 b/d, a third of initial levels at independence.⁵⁵

First, a power struggle between President Kiir and Riak Machar, once vice-president, rapidly degenerated into civil war and humanitarian disaster at the end of 2013. In the fighting, the strategic importance of oil as the key generator of income for the South Sudan government made oilfields targets for opposition forces.

Unity state's 45,000 b/d in output was shut down by mutinied armed forces shortly after the conflict began. Control rooms, storage tanks, manifolds, and other infrastructure were damaged in the fighting. Advancement on a small-scale diesel refinery by a Russian company, the Safinat Caspian Oil Refining Company, was also put on hold by the conflict.⁵⁶ Oil company officials estimate that repairs to oil installations, which had not yet begun by late 2016, will take around a year to complete.⁵⁷

In Upper Nile, where the majority of South Sudan's oil is produced, the industry fared better. Local pro-government militias were successful in pushing back advances from opposition forces on the Paloch and Adar Yale oilfields. But the fighting led to the evacuation of hundreds of Chinese and other foreign oil workers and made it even more difficult to supply the oilfields with machinery and

⁵² Ilya Gridneff, 'Exxon Ends Oil Search With Total in South Sudan as War Rages', Bloomberg, 14 August 2014.

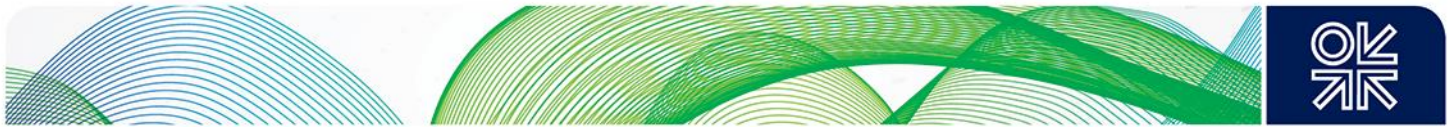
⁵³ Total remains partnered with Kufpec, an overseas subsidiary of Kuwait's national oil company, while ExxonMobil left the consortium in 2014 due to a lack of progress.

⁵⁴ It was conducted over a 10-month period by the German engineering consultancy ILF, which later sub-contracted on the Uganda-Kenya pipeline study, and the London-based advisory group, Infrastructure Development Partnership. But two days after the consultant's findings were presented to President Salva Kiir in December 2013, civil war broke out; 'Energy Infrastructure: Understanding Risk, Optimizing Value, Joint Capability Statement, Oil and Gas', ILF Consulting Engineers and Infrastructure Development Partnership, no date, p. 12; Infrastructure Development Partnership, Government of South Sudan - oil export / monetization, <http://www.infradev.co.uk/south-sudan.html>, accessed 23 February 2017.

⁵⁵ 'BP Statistical Review of World Energy June 2016', BP, London, p. 8.

⁵⁶ Joshua Craze & Jérôme Tubiana with Claudio Gramizzi, 'A State of Disunity: Conflict Dynamics in Unity State, South Sudan, 2013–15', *Small Arms Survey*, HSBA Working Paper 42, 2016, p. 62.

⁵⁷ Joshua Craze & Jérôme Tubiana with Claudio Gramizzi, 'A State of Disunity: Conflict Dynamics in Unity State, South Sudan, 2013–15', *Small Arms Survey*, HSBA Working Paper 42, 2016, p. 42.



parts.⁵⁸ Altogether, with only Upper Nile oil still in production, South Sudan was exporting around 130,000 b/d by mid-2015, representing a drop of over 50% compared to pre-independence levels.⁵⁹

Outside of South Sudan's ongoing civil war, regional relations with Sudan are central to maintaining oil production. South Sudan remains economically dependent on Sudan as the only route to sell its oil on international markets. There is a mutual interest for both sides to keep the oil flowing. Sudan is paid its transitional financial arrangement through every barrel exported from South Sudan. But as the oil shutdown in 2012 demonstrates, political and personal priorities of South Sudan's leadership can undermine straightforward economic rationales.⁶⁰

Second, after South Sudan's independence in 2011, hostile relations with Sudan have been destructive to the strength and longevity of their once shared oil industry. After failing to come to an agreement with South Sudan on the level of transit fees, Khartoum began to take payment in kind through the confiscation of oil passing through its territory in late 2011. In response, South Sudan elected to shut down its oil production in January 2012. The dispute devolved into a short border war between the two sides, in which Sudan bombed South Sudan's oil infrastructure and South Sudan briefly captured the disputed Heglig oilfield in Sudan, which it claims as its own, and calls Panthou.⁶¹ The conflict disrupted an average of 315,000 b/d of oil production in both countries in 2012.⁶² While international partners were successful in convincing South Sudan to withdraw its forces, both the crash shutdown and fighting led to considerable damage to oilfields and infrastructure, increasing the costs of recovery and upsetting the longevity of oil production.

After spending all its cash reserves and amassing a debt of some \$4.5 billion during the oil shutdown,⁶³ the reality of South Sudan's short-term revenue needs quickly arose. In September 2012, South Sudan came to an agreement with Sudan on the level of transit fees.⁶⁴ For a three-and-a-half-year period, South Sudan agreed to pay Sudan \$11 per barrel for oil transported from Block 2 and 5A in Unity state and \$9 per barrel for oil in Block 3 and 7 of Upper Nile state. It also agreed to a transitional financial arrangement of \$3.028 billion to be paid at a rate of an additional \$15 per barrel in order to help Sudan offset the loss of 75% of its oil resources.⁶⁵ The agreement ended a 15-month shutdown. South Sudan restarted oil production in April 2013, and the first oil shipments were sold out of Port Sudan in July.

However, the fall in global oil prices and the outbreak of civil war quickly altered South Sudan's position towards the pipeline fee deal. Since fee levels were not pegged to prevailing prices, as the oil price fell to below \$30 per barrel in early 2016, and after accounting for a \$7-8 discount on South Sudan's low quality Dar blend and Sudan's \$24 per barrel fee for oil production from Upper Nile state, South Sudan was making a loss on every barrel of oil it sold in international markets.⁶⁶ Four years after agreeing to pay a multi-billion transitional financial arrangement to Sudan to redress its loss of oil stemming from South Sudan's independence, it was South Sudan that was in need of assistance. Sudan was arguably generating more revenue from its oil production and transit fees than South Sudan was earning from exploiting the majority of the once united country's oil resources. Unsurprisingly, South Sudan was eager to rewrite the terms of the pipeline fee deal with Sudan. After

⁵⁸ Due to the ongoing fighting, work on another small-scale refinery at Thiengrial by the Frontier Resource Group could not move ahead, although it was already stalling due a lack of interested financiers.

⁵⁹ South Sudan's Dar Blend crude exports to fall 9% on month to 4 mil barrels in June, *Platts*, 15 May 2015.

⁶⁰ Alex de Waal, 'When kleptocracy becomes insolvent: brute causes of the civil war in South Sudan', *African Affairs*, Vol. 113, No. 452, 2014.

⁶¹ 'Oil well bombing raises heat in Sudan oil dispute', Reuters, 6 March 2012; Laura M. James, 'Fields of Control: Oil and (In) security in Sudan and South Sudan', Small Arms Survey, HSBA Working Paper 40, 2015, pp. 44-5.

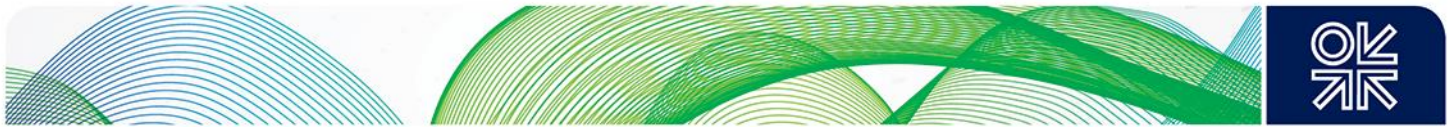
⁶² 'Sudan and South Sudan', Country Analysis Brief, U.S. Energy Information Administration, 3 September 2014, p. 7.

⁶³ 'S. Sudan silent on \$4.5bn loan obtained after oil shutdown', *Sudan Tribune*, 22 November 2013

⁶⁴ 'Who pays the pipeline', *Africa Confidential*, Vol. 53, No. 3, 3 February 2012.

⁶⁵ This figure was not pegged to global oil prices, which were well over \$100 per barrel at the time.

⁶⁶ A South Sudanese government committee found that Sudan was still collecting 80% of its oil revenues from fees and payments, and questioned whether South Sudan would be better off shutting down production again due to the limited revenues from the industry; Emmanuel Akile, 'MPs prefer oil production shutdown', *Eye Radio*, 23 November 2016.



a year of negotiations, at the end of 2016, the Sudans agreed to extend the agreement for three years.⁶⁷ While the new agreement was not publicly released, South Sudan's oil minister commented that payments would now be made on a sliding scale according to global oil prices.⁶⁸

The new agreement established further cooperation on oil between the Sudans. Sudan agreed to allow oil companies to use the Sudan base camp at Heglig, as well as power and imported materials, to operate oilfields on the South Sudan side of the border.⁶⁹ This will help South Sudan bring production closed during its civil war back onstream in a timelier fashion. But it also increases South Sudan's dependency on Sudan for the operation of its oil industry, increasing Khartoum's leverage over Juba to extract political concessions from its oil infrastructure. Sudan is keen to ensure South Sudan halts any support to Sudanese opposition groups, the SPLA North and Darfuri groups. South Sudan is also adamant that Sudan end support to South Sudanese opposition forces.⁷⁰ And since the beginning of 2016, a compromise on stemming cross-border support of opposition forces has largely held between the two sides.⁷¹

Political and security dynamics in the Sudans, however, are anything but stable. South Sudan is still facing interconnected security, economic and humanitarian crises. At the end of 2019, the latest pipeline agreement will expire, and Sudan will very likely no longer receive transitional financial arrangement payments from South Sudan. At this point, South Sudan's oil production will very likely have rebounded, and it will be in a difficult bargaining position against Sudan. Khartoum may very well try to extract further political or economic concessions from the advantageous position its oil infrastructure offers.⁷² Consequently, the centrality of regional relations to the functioning of South Sudan oil industry will remain into the coming decade.

V. Regional Pipeline

The largest political risks facing oil industries in East Africa are associated with regional politics and pipeline infrastructure. Without access to regional pipelines, the largest oil reserves in the region, dwindling resources in South Sudan and still untapped in Uganda, cannot be monetised. Even oil resources in Sudan and Kenya are located inland and require functioning pipeline systems. For Uganda and Kenya, the regional pipeline debate is not only about finding the most efficient economic route, it is entrenched in the interplay between domestic politics and regional relations in the East African neighbourhood.

From a regional economic perspective, there was a straightforward solution to exploit Uganda and Kenya's oil resources. A joint pipeline from Hoima in Uganda, passing through, or linked to Turkana County in Kenya and onward to the Indian Ocean coast at Lamu, would allow the region to link newly discovered oil resources and limit the overall costs of construction and operation. But over the last two years, a new pipeline route has been prioritised. It would traverse from Uganda to Tanzania, bypassing perceived risks in Kenya, and fulfilling political priorities in Uganda, as well as the corporate goals of the French oil major Total. Kenya, as a result, has been left to explore possibilities of going it alone.

⁶⁷ Due to lower than expected oil production in South Sudan over the past three years, there remains around \$1 billion owed to Sudan in the transitional financial arrangement Laura M. James, 'Fields of Control: Oil and (In)security in Sudan and South Sudan', Small Arms Survey, HSBA Working Paper 40, 2015, p. 46.

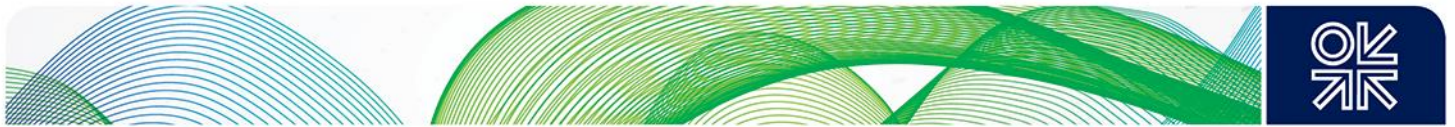
⁶⁸ When oil prices are below \$30 per barrel, South Sudan's oil minister said, South Sudan will not pay anything more than the transit fee (\$11/b in Unity state and \$9/b in Upper Nile state). But as oil prices rise to \$60, in addition to the transit fee, the transitional financial arrangement payments will increase proportionally to the full \$15/b when oil prices are \$61 or above; Author estimates based on Okech Francis, 'South Sudan Beefs Up Security at Oil Fields', *Bloomberg*, 8 February 2017.

⁶⁹ 'Sudanese petroleum minister discusses oil cooperation in Juba', *Sudan Tribune*, 8 August 2016.

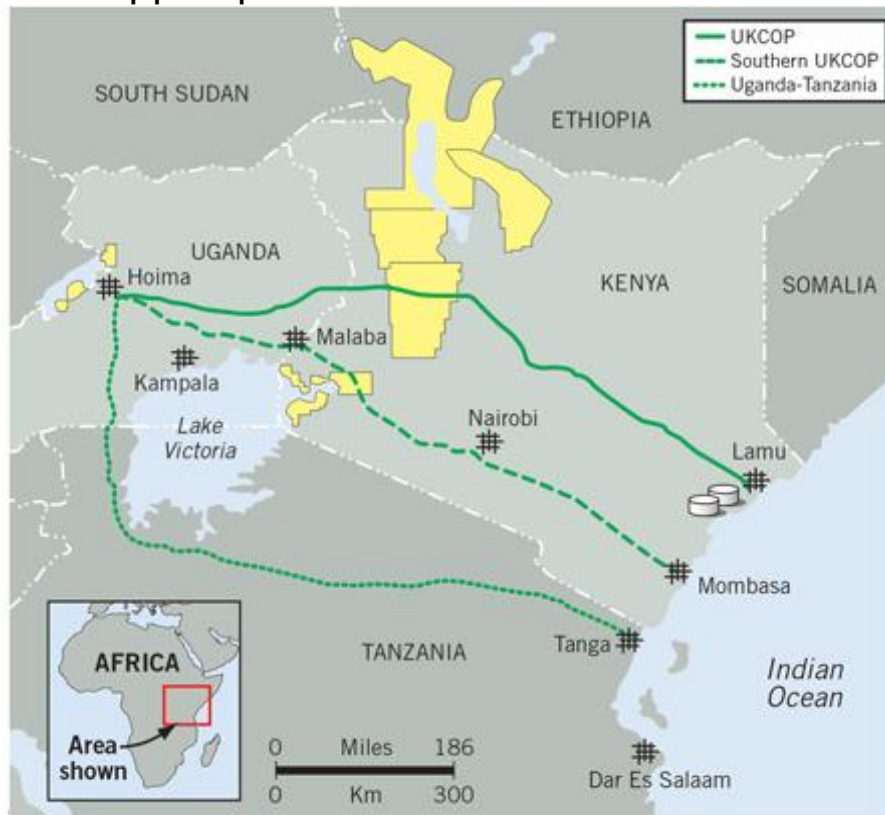
⁷⁰ 'South Sudan: Rearranging the Chessboard', *International Crisis Group*, Crisis Group Africa Report N°243, 20 December 2016, pp. 6-8.

⁷¹ Uganda also backing away from supporting Sudanese opposition groups, leading to an overall calming of proxy wars and tensions in the region.

⁷² Outstanding issues where Sudan will seek to gain on advantage by controlling the region's oil infrastructure include disagreements on borders in the Abyei region and the Heglig/Panthou oilfield



Map 4: East Africa oil pipeline possibilities



Source: Oil and Gas Journal

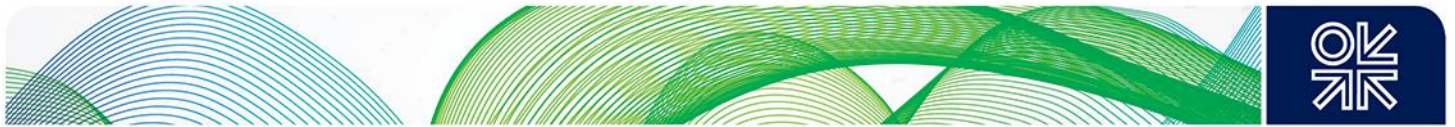
Table 1: Comparison of pipeline construction cost and tariff estimates⁷³

	Tanzania - Tanga	Kenya north - Lamu	Kenya central - Mombasa
CAPEX bn	\$3.7 – 3.9 (JTT)	\$5 (TT) \$5.1 – 5.8 (JTT)	\$4.4 – 4.6 (JTT)
Tariff/b	\$15.86 for Uganda w/o Kenyan oil (Kenya govt)	\$12.56 for Uganda & \$7.04 for Kenya w/ Kenyan & Ugandan oil (Kenya govt) \$14 for Kenya w/o Ugandan oil (Kenya govt)	\$11.79 for Uganda & \$9.29 for Kenya w/ Kenyan & Ugandan oil (Kenya govt)

Uganda's change of preference to Tanzania for its pipeline route came shortly after an agreement for a joint pipeline with Kenya was made.⁷⁴ Toyota Tsusho completed a feasibility study of the northern

⁷³ Construction cost estimates based on average costs in Uganda's Joint Technical Team's (JTT) analysis and the final report of Toyota Tsusho (TT) on the Hoima-Lokichar-Lamu Crude Oil Pipeline. Tariffs based on Kenya government's estimates reported in Christabel Ligami, 'Tanzania now joins talks to resolve oil pipeline triangle and seeks route for its natural gas', *The East African*, 27 March 2016.

⁷⁴ After a meeting of the two countries presidents in August 2015, both released communiqués endorsing the Hoima-Lokichar-Lamu Crude Oil Pipeline, which would be constructed across Kenya's northern region and ending at a new port in Lamu; Elias Biryabarema, 'Kenya, Uganda settle on crude pipeline route', *Reuters*, 10 August 2015.



route to Lamu, estimating a cost of roughly \$5 billion for a 1,451 km pipeline and essential port facilities (Uganda's Joint Technical Team estimated between \$5.1 and \$5.8 billion).⁷⁵ With the quality of Ugandan and Kenyan crude compatible for blending, the joint project had the potential to be the first cross-border pipeline in sub-Saharan Africa taking crude from two separate jurisdictions.

But even with the joint agreement, there remained stark differences between Uganda and Kenya. Uganda demanded that implementation would only move forward if Kenya could guarantee security on its side of the route, financiers for the project, and that the transit fee would remain lower than alternative routes.⁷⁶ In Toyota Tsusho's feasibility study, insecurity was pegged as the largest risk on cost and time facing the pipeline's construction and operation. Beginning in the restive region of Turkana, and traversing across northern and coastal regions, close to the border with Somalia, the pipeline would face threats from the regional militant group al-Shabaab, which has launched attacks in Lamu and Garissa counties, as well as in the capital Nairobi, in recent years.

Land acquisition is regarded as another key risk for the pipeline. The pipeline is seen by Kenya as essential in kick-starting the wider LAPSET infrastructure project, which the ruling Jubilee alliance under President Kenyatta argues will help raise living standards in marginalised areas. From its perspective, by promoting development, the pipeline, will actually ease security challenges in the regions it passes through. A more critical perspective, however, regards LAPSET as a vehicle to expand the interests of the Kikuyu elite of Nairobi and the central highlands, from which President Kenyatta hails.⁷⁷ Land grabbing along the pipeline route may in fact stoke grievances of already marginalised local communities in oil-bearing and coastal regions. Supportive infrastructure in the Northern corridor is also lacking, including roads and utilities required in powering the heated pipeline.

Another route for a pipeline from Uganda to Kenya, touted by Kampala and international oil companies in Uganda in early 2015, was through the Central corridor from Hoima to Nairobi to Mombasa.⁷⁸ Gulf Interstate Engineering, a Houston-based pipeline engineering company, completed studies on the route. It found that the spur line from Turkana to Nairobi faces considerable technical challenges, owing to crossing highlands in the Rift Valley. Land acquisition issues are also prevalent due to private ownership and heavily populated areas on the route. And at the export point, congestion and demerging issues are rife at the Mombasa port.⁷⁹

There were some straightforward advantages that made the central route stand out from the northern option. It followed the path of an existing product pipeline from Eldoret to Nairobi to Mombasa, so it could take advantage of existing road and rail infrastructure.⁸⁰ There were also lower security concerns, but a spur line from Lokichar is needed, pushing the length and cost of the pipeline up. Uganda's Joint Technical Team predicted a much lower range at between \$4.4 and \$4.6 billion. Altogether, international oil companies, particularly Total, and the Ugandan government, still viewed the central route through Kenya as lacking the high risk facing the northern route.

Due to its political priorities, however, the Kenyan government has, to date, decided to advance with the northern option. But with Uganda's apparent departure, the question remains whether Kenya can finance the 850 km pipeline on its own. Kenya was in a much better position when global oil prices were above \$100 per barrel, but lower prices, and bearish forecasts, have changed this perspective drastically. Whether or not Kenya's oil resources can be scaled up in the coming years to 1 billion

⁷⁵ Hoima-Lokichar-Lamu Crude Oil Pipeline, Toyota Tsusho, 2015, pp. 35-6.

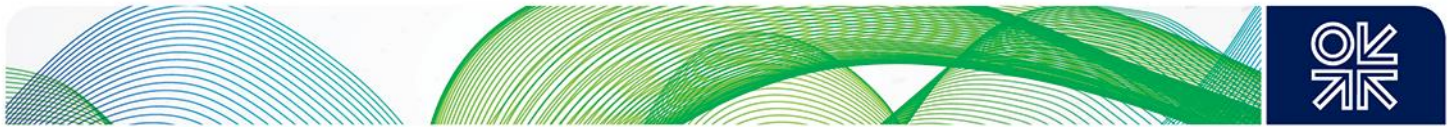
⁷⁶ Frederic Musisi, 'Cracks emerge in Uganda-Kenya oil pipeline deal', *The Daily Monitor*, 15 August 2015.

⁷⁷ Interview, international oil company active in East Africa, 30 April 2015.

⁷⁸ 'End of Museveni-Kenyatta honeymoon', *The Indian Ocean Newsletter*, No 1393, 12 December 2014; 'The pipeline of discord', *The Indian Ocean Newsletter*, No. 1407, 10 July 2015.

⁷⁹ Personal communication, international oil company active in East Africa, 13 August 2015; Hoima-Lokichar-Lamu Crude Oil Pipeline, Toyota Tsusho, 2015, p. 38.

⁸⁰ Hoima-Lokichar-Lamu Crude Oil Pipeline, Toyota Tsusho, 2015, pp. 252-53.



barrels or above is essential in driving interest in a Kenya pipeline. The apparent loss of the joint pipeline, and ascent of Tanzania as a second regional trade hub, has fuelled regional competition.⁸¹

After the central route through Kenya appeared not to be an option, Total made its position clear that it preferred the Southern corridor through Tanzania, lobbying both Dar es Salam and Kampala, and suggesting a role in preparing its financing.⁸² But the change of decision was upsetting to oil companies active in Kenya. Africa Oil, with no assets in Uganda, would have a harder time profiting from its Kenyan interests.⁸³ Nor was it a desirable outcome for Tullow, which would have benefited from the joint pipeline linking its Uganda interests to its relatively smaller oil resources in Kenya.⁸⁴

Still, a Uganda-Tanzania pipeline has emerged as a viable alternative from the Kenya routes. At roughly \$3.9 billion, according to Uganda's Joint Technical Team, a 1,443 km pipeline, running from Hoima in Uganda, across the western side of Lake Victoria and traversing Tanzania to the coast at Tanga, offers a lower cost alternative to the Kenya options.⁸⁵ The Tanzania route could be built quicker, faces less challenging terrain to cross, lower security concerns, more straightforward land acquisition, due to government ownership, and existing road and railway networks for construction.⁸⁶

At the export point at Tanga, unlike Lamu, a port already exists, and will be upgraded. Tanga also has a natural shelter from Pemba Island, as opposed to Lamu and Mombasa where high currents halt shipping traffic for around one month a year.⁸⁷ Tanzania also proposed lower initial transit fees to Uganda and offered to invest 8% in its refinery project. As a result, the southern route through Tanzania quickly gathered momentum, and in January 2017, Uganda and Tanzania started Front-End Engineering Design work with an ambitious aim of finalising the pipeline by 2020.

After years of setbacks, the Ugandan government is more determined to advance towards first oil at a steady pace. While the northern and central routes in Kenya face numerous risks that could derail pipeline construction for extended periods, the Tanzania route, on the face of it, presents a faster path to first oil for Uganda. At the same time, the Ugandan government remains fearful of its overdependence on Kenya as its primary regional link to international markets.⁸⁸ An opportunity to balance the flow of trade by engaging with Tanzania on a regional pipeline was a strategic priority, opening the way for two regional economic hubs on the East African coast.

Yet the pipeline saga in East Africa is not yet finished. While the southern route in Tanzania continues to move ahead as the most likely option,⁸⁹ until financing is arranged and work commences on the pipeline, further delays may very well arise. Tanzania originally suggested it could offer Uganda a lower transit fee than Kenya, but negotiations on the intergovernmental agreement were stalled on this and other issues.⁹⁰ Tanzania is also seeking to become a supplier of gas to the region through the negotiations on oil pipelines.⁹¹ Its possible future position as the only route to international market

⁸¹ In March 2016, bad blood between the Kenyans and Tanzanians over the decision was evident when senior Kenyan oil officials were barred, with their passports confiscated, from visiting Tanga port on a joint Uganda-Kenya visit; **Graham Kajilwa and Jacob Ng'etich**, 'Kenya protests to Tanzania over confiscation of Charles Keter's passport', *The Standard*, 25 March 2016.

⁸² 'Oil firms prefer Tanga pipeline route to Lamu', *The East African*, 14 September 2015.

⁸³ Ilya Gridneff, 'Africa Oil sees joint pipeline as only option for Uganda, Kenya', *Bloomberg*, 10 November 2015.

⁸⁴ Joseph Burite, 'Tullow sees opportunity cost if Kenya-Uganda pipeline plan fails', *Bloomberg*, 30 March 2016.

⁸⁵ Frederic Musisi & Mark Keith Muhumuza, 'How oil pipeline deal slipped out of Kenya's hands', *The Daily Monitor*, 25 April 2016.

⁸⁶ 'Perils of the pipeline', *Africa confidential*, Vol. 57, No. 10, 13 May 2016.

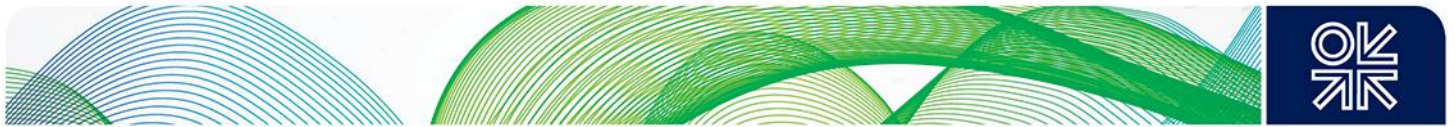
⁸⁷ Tom Bowker, 'Tanga time', *Petroleum Economist*, 3 May 2016.

⁸⁸ Uganda is concerned of a potential repeat of the 2007-08 post-election violence in Kenya, which closed off landlocked Uganda from key imports from at Mombasa.

⁸⁹ Moving forward with Tanga may be a potential means to end for Uganda and Total to push Kenya to accept a pipeline through its Central corridor and the Mombasa port. This will be of particular interest if Total were to become a partner in the joint venture with Tullow, Africa Oil, and Maersk Oil in Kenya; 'Total brandishes Tanzanian card to thwart Lamu pipeline scheme', *The Indian Ocean Newsletter*, No. 752, 1 September 2015.

⁹⁰ Julius Barigaba, 'Museveni's visit to Dar rescues oil pipeline deal, sets project timelines', *The East African*, 6 March 2017.

⁹¹ Christabel Ligami, 'Tanzania now joins talks to resolve oil pipeline triangle and seeks route for its natural gas', *The East African*, 27 March 2016.



for Ugandan oil would only elevate its regional influence, particularly if economic and politics destabilise Uganda in the future. As the only route for Uganda's oil, Tanzania could leverage its position to renegotiate pipeline fee terms in the future.

Conclusion

Oil in East Africa has taken time to develop. Previously in Sudan and Chad, where onshore oil was first found in the 1970s and 1980s, it took several decades to finally exploit oil resources due to civil war. In comparison, the possible 15 to 17 year period from first oil to first exports for Uganda, and 10 to 12 years period for Kenya, may not be overly long considering the inherent difficulties both face in improving their capacities to manage and work with international oil companies, and the challenges of bringing oil from deep inland with a lack of existing infrastructure to the coast.

The possible futures for East Africa oil remain numerous. In five years, a regional pipeline linking Uganda to the Indian Ocean coast may very well be finished. At present, a route through Tanzania seems more likely than one linked to Kenya's oil resources in Turkana County. Kenya in turn may struggle to find investors for its own pipeline, particularly if resource levels hit a ceiling and global oil prices continue stagnate or fall. If Uganda were to dramatically swing back to Kenya for its pipeline route, significant delays should be expected. In South Sudan a period of stability is required before the laborious process of recovering the oil industry can begin.

But East Africa's oil boom, while much belated, will come in time. Along with domestic and evolving regional risks, global oil prices will be influential in determining its ultimate timing, size, and scope. But very likely by early next decade, oil will begin to flow through a new regional pipeline, the first oil exports will leave to international markets, and billions in petrodollars will boost government revenues in the region.

A future regional pipeline in East Africa has the potential to de-risk new exploration areas in the region. Depending on long-term forecasts of global oil prices, a regional pipeline would incentivise exploration activities in and around Lake Albert in Uganda and northeastern DRC (where Total did seismic work in early 2016),⁹² Lake Turkana in Kenya, as well as Lake Tanganyika and Lake Eyasi in Tanzania.⁹³ After an arduous journey in advancing the oil industries in Uganda and Kenya, these ventures may yet open up the next frontier for African oil.

Other outcomes for East Africa oil are possible. A fall in global oil prices may threaten the certitude of final investment decisions from international oil companies and government officials. At the same time, given the dynamics of the past decade, the potential for new delays due to political and security risk at the domestic or regional level should not be discounted. While there has been gradual progress in Uganda and Kenya towards first oil, one of the only persistent outcomes in East Africa oil has been that plans have been set back time after time.

Politics and security risks will also loom over any new production and future exploration more broadly in the region. Some of the main oil-bearing areas, including Uganda's Lake Albert, Kenya's Turkana County, and South Sudan's restive oil areas and border with Sudan, remain relatively hostile environments where local communities and political representatives contest control over oil resources with central authorities in far-off capitals. Once production does come onstream, questions will become focused on how new producers in East Africa will utilise newfound petrodollars to advance development in the region.

⁹² 'Total conducting seismic testing on Congo oil block', *Reuters*, 4 February 2016.

⁹³ Peter Bofin & Rasmus Hundsbaek Pedersen, 'Tanzania's oil and gas contract regime, investments, and markets', Danish Institute for International Studies, DIIS Working Paper No. 1, 2017, p. 33.