Netherlands Commission for Environmental Assessment

Review of the Environmental and Social Impact Assessment (ESIA) Report for the Kingfisher Project

UGANDA




8 March 2019
Ref: 7308

Netherlands Commission for Environmental Assessment
25 years

National Environment Management Authority
Mr I. Ntujju
Plot 17/19/21 Jinja Road, NEMA House
Kampala
Uganda

our reference
7308
enquiries to
Ms I.A. (Ineke) Steinhauer
direct phone no.
+31 30 234 76 54

Date: 8 March 2019
Subject: *Review of the Environmental and Social Impact Assessment (ESIA) Report for the Kingfisher Project*

Dear Mr Ntujju,

In your email dated 28 December 2018, you requested the Netherlands Commission for Environmental Assessment for support in the quality assurance and review of the Environmental and Social Impact Assessment (ESIA) for the Kingfisher project.

It is my pleasure to submit herewith our advice titled "Review of the Environmental and Social Impact Assessment (ESIA) Report for the Kingfisher Project", prepared by an independent working group of the NCEA.

The Kingfisher ESIA report contains a lot of relevant information and is in general of good quality. But on a number of key issues, more specific information needs to be provided to enable well-informed decision making and a controlled and responsible project.

I would like to express my appreciation for the organisation of the visit and working sessions. This has allowed the NCEA to receive necessary information in a short period of time, which helped us to find some answers in a complex situation.

I would like to repeat once more that the NCEA is willing to continue co-operation with NEMA in the next stages of this ESIA procedure and for advice in general.

Yours sincerely,

[was signed]

Ms M.W.J.A. (Tanya) van Gool
Chair of the Working Group

A. v. Schendelstraat 760
3511 MK Utrecht
The Netherlands

t +31 (0)30 2347660
e ncea@eia.nl
w eia.nl

IBAN NL30RABO0394334973
CoC 41185216
VAT NL8004.015.42.B.01

Advisory Report by the NCEA

Title	**Review of the Environmental and Social Impact Assessment (ESIA) Report for the Kingfisher Project in Uganda**
Request by	The Ugandan National Environment Management Authority (NEMA)
Attn	Mr I. (Isaac) Ntujju Ms E. (Enid) Turyahikayo
CC	Mr F. (Frank) Eklo – Norwegian Environment Agency (NEA) Ms G. (Gro) Øfjord – NEA
Date	8 March 2019
From	The Netherlands Commission for Environmental Assessment
Members of the working group	Ms M.W.J.A. (Tanya) van Gool (Chairperson) Mr A.J. (Arend Jan) van Bodegom (Expert on natural resources management) Mr J.P. (Bopp) van Dessel (Expert on oil and gas development) Mr J. (Jasper) Griffioen (Expert on environmental hydrogeology) Mr T. (Tom) Ogwang (Expert on social sciences) Ms I.A. (Ineke) Steinhauer (Technical Secretary)
Quality control	Ms L. (Leyla) Özay (Technical Secretary)
Reference	7308

Contact:
w www.eia.nl
t +3130 234 76 60
e ncea@eia.nl

Table of contents

1. Introduction

1.1 Background

In 2006, commercial quantities of oil were confirmed to exist in Lake Albert basin in Uganda. The oil companies in Uganda (CNOOC, Total and Tullow) finished the exploration phase and are now heading towards development, leading to the exploitation of Ugandan oil resources. Once produced, the crude oil will be partly refined in Uganda to supply the local market and partly exported to the international market. The export to the international market will be through the planned East Africa Crude Oil export pipeline (EACOP).

The Kingfisher oil development project is located on the Buhuka Flats at the borders of Lake Albert, where the proposed production facility will be built, consisting of:

- A central processing facility (CPF), where well fluids from wells drilled under Lake Albert will be processed and transported via a feeder pipeline to Kabaale, where the government intends to establish an industrial park including an oil refinery. LPG (liquid petroleum gas) will also be produced for the local market, and electricity will be generated during the initial years of operation and provided into the national grid.
- Supporting infrastructure, including flowlines from the well pads to the CPF, access roads, an upgraded jetty, a water abstraction station at Lake Albert, temporary and permanent personnel camps, a materials yard, underground power cables from the CPF to other infrastructure, truck buffer yard, drilling storage yard, airfield/helipad and a safety check station at the top of the escarpment.
- A 46.2 km feeder pipeline from the CPF to the Kabaale refinery. The pipeline will be heated to approximately 80°C to ensure the waxy crude oil keeps flowing.

The geographical context and location of the Project are shown in Annex 3.

This is the second of a series of petroleum field development projects, for which an Environmental and Social Impact Assessment (ESIA) report has been submitted to the National Environmental Management Authority (NEMA).

1.2 Request of the Ugandan NEMA and involvement of the NCEA

The Netherlands Commission for Environmental Assessment (NCEA) has a long-standing relation with the NEMA. Regarding petroleum development, the following activities are relevant:

- Between 2010 and 2013, the NCEA and the Norwegian Oil for Development programme provided assistance on a Strategic Environmental Assessment (SEA) for oil and gas development in the Albertine Graben.
- In March 2017, the NCEA facilitated a workshop to build the capacity of environmental pillar institutes in Uganda involved in the review of ESIA reports to be expected for petroleum field development in the Albertine Graben.
- In September 2017, the NCEA received a NEMA delegation with the aim to jointly review the Scoping Report and ToR for the ESIA to be undertaken for the EACOP Project. For the joint review, an NCEA working group of experts was composed, contributing to a 5-day quality assurance working session in the Netherlands with the NEMA delegation. The report with findings is available at NCEAs website.
- In July 2018, the NCEA participated in a joint review retreat organised by NEMA for the ESIA report for Tilenga oil development, where, apart from NEMA, representatives of

various lead agencies participated, as well as two representatives from the Norwegian Environmental Agency (NEA). The review findings and review approach are documented in a report (also available at NCEAs website).

It is within this cooperation framework that the NEMA has now requested NCEA support in the quality assurance and review of the ESIA for the Kingfisher oil development project[1] (see Annex 1 for request). The review took place in a workshop setting in Hoima (including a one-day field visit), where (apart from NEMA) representatives of various lead agencies participated, as well as a representative from the Norwegian NEA (see Annex 2 for the programme). Annex 4 presents a selection of photos of the visit and review activities.

The purpose of the workshop was to interact with all review teams involved (NEMA/lead agencies/NCEA/NEA) and appreciate the issues of concern. The field visit allowed to get a good impression of the project site and to discuss with local stakeholders. The NCEA visit to Uganda took place from 24 to 28 February 2019.

1.3 NCEA expert working group and approach taken

This report is prepared by a working group of experts of the NCEA, comprising expertise in: natural resource management, oil and gas development, environmental geohydrology, social sciences and ESIA and SEA application. The composition of the working group and background of the individual experts is presented in the Colophon. The composition of the expert group is similar to the EACOP review in 2017 and the Tilenga review in 2018.

Note that the working group does not express an opinion on the feasibility or acceptability of the project itself, but comments on the quality and completeness of the ESIA report, in line with Ugandan and international regulations. The working group members also used their own practical experience in reviewing ESIAs for comparable projects.

Based on the site visit and the discussions held in the review workshop, the NCEA drafted this advisory quality review report with the following aim:

- To verify whether the ESIA report contains adequate, accurate and sufficient information (on environmental and socio-economic impacts and on options/alternatives/mitigation measures to deal with these) to guarantee that all essential information is provided in the ESIA report for sound and well-balanced decision making and through a transparent and inclusive process.
- In the case of shortcomings, the consequences for decision making are assessed and recommendations are given for supplementary information needed to address these shortcomings.

Before and during the visit to Uganda, the NCEA working group provided comments and advice in the format of power-point presentations, written contributions and by participating in talks and discussions.

[1] Environmental and social impact assessment for the CNOOC Uganda ltd Kingfisher oil development, Uganda, Sept. 2018.

2. Main review findings

2.1 General impression regarding presentation of information

The NCEA is of the opinion that the various volumes of the ESIA report are well written, contain clear tables of contents, and are supported with a illustrative figures, photos, tables and maps. The assessment is extensive and many topics, that can be expected from good practice ESIA, are well captured with sufficient detail. The problems, potential impacts and risks are described in a realistic and frank way, and critical aspects are clearly described. Quite a number of impacts is (legitimately) rated as 'high' before mitigation.

The Non-Technical Summary is extensive, but not too long and well-structured and readable. This is, however, less applicable to the other volumes of the ESIA:

- Main Report (about 800 pages and 200 pages annexes on the public participation process);
- ESMP for the CPF, Wells and Ancillary Infrastructure (325 pages);
- ESMP for the Feeder pipeline (240 pages);
- Three Volumes on the Physical Environment (about 750 pages), on Biodiversity and Ecosystem Services (750 pages) and on Social impacts and cultural heritage (almost 1000 pages).

These 4000 pages altogether show a lot of repetition (e.g. the project description is repeated at least 4 times) and quite some redundancy (e.g. texts on the Feeder pipeline contain repetitions from those on the CPF/drilling, while not being relevant for the Feeder pipeline).
The 2 volumes on the Environmental and Social Management Plans (ESMPs) are divided into the construction, operational and decommissioning phases. Again here, a lot of text is repeated, which makes the ESMPs very bulky, rather inaccessible and thus not really suitable: namely to check whether mitigation plans are indeed sufficient and will be implemented. The developer claims that this repetition is done intentionally, so that the contractors can deal with the different ESMPs separately. However, for the general public and other stakeholders, the overload of information may lead to a situation where the reader of the ESIA gets lost.

2.2 General impression on content of information

In the opinion of the NCEA working group, the Kingfisher ESIA contains a lot of relevant information and is fairly complete, but on a number of key impacts, more specific/effective mitigation measures need to be developed/agreed upon to really mitigate the impacts rated as 'high' and enable well-informed decision making and a controlled and responsible project. Otherwise, the ESIA, although generally of good quality, may significantly underestimate the residual impacts of the project.
Therefore, NEMA is advised to ask for supplementary information (e.g. in the form of an addendum to the ESIA report) on a number of shortcomings, before an environmental certificate is awarded. The shortcomings are mentioned below in Chapter 3 in random order. The NCEA recommendations are presented in the boxes at the end of each section.

3. Key issues

3.1 Project infrastructure and alternatives: location of well pads

All 4 well pads lie near, or almost at the shore of Lake Albert thus causing risks with respect to pollution of Lake Albert and subsequent environmental risks and social consequences.

Well Pad 1 lies within the wetland at the mouth of the Kamansinig River. According to p. 131 of the Biodiversity Impact Assessment: "*The extension of well pad 1 will impact directly on wetland functioning in the seasonally-flooded grassland associated with the lower reaches of the Kamansiniga River. The existing well pad is within the northern edge of these seasonally flooded grasslands. The expanded well pad will extend the impact on the wetland into the center of the floodplain. The magnitude of this impact is considered to be high from legal and functional perspectives – the location is prohibited by Ugandan legislation (Uganda Wildlife Act, 2000), and contrary to the natural habitat conservation guidelines of IFC PS6 – and the impact on wetland function could be material, interfering with subsurface flow and surface flow during peak flow events. The vegetation within these seasonally flooded grasslands is adapted to seasonal inundation, and, therefore, is dependent upon that cycle of wet and dry for survival. The noise and sensory disturbances created by the construction equipment could alter the behavior of species frequenting the wetlands, particularly Grey Crowned Crane. Coupled with the very high sensitivity of this system, with its hydrological interconnectivity to the Bugoma lagoon, the impact significance will be high.*"

Well Pad 2 is located at the head of the airstrip, as are fuel tanks, flare pit and drilling fuel reserve tanks. Also waste water pipelines come together and pass here. If a plane cannot stop in time, it will run into the well pad, fuel tanks, harm water discharge facilities etc. with possible disastrous consequences for the lake water and the village. At the reverse: if a plane comes in from the north and if it flies too low, it could directly crash on the fuel tanks. The location of these project components in the immediate vicinity of the lake is dangerous and remains a high risk with potentially a high impact under any mitigation measure. Overall, the ESIA contains contradicting information on the future of the air strip: it is stated that it will be upgraded for the construction phase, but also that it will be used for storage of materials. In other parts it is stated that the airstrip will be decommissioned after construction and instead a helicopter pad will be used, which location is still to be determined.

In general, remarkably little attention is spent on alternative locations for the well pads (under section 11.2 at p. 11-7 of Volume 1). For instance, the village of Kyabasambu will completely be surrounded by airstrip and installations of the oil company. It will become almost inhabitable because of the noise volumes, far above (Ugandan and international standards) acceptable levels. In addition to noise and visual aspects, traffic, security issues, sense of isolation, smell (?) could be a problem. Will children be safe to go out of the village and play somewhere? Where will cattle have possibilities to cross? These impacts are underestimated. It is questionable if the co-existence of the village and the nearby oil drilling activities is possible. Resettlement of the village should be an alternative to be considered in the ESIA.

Well Pad 2 is currently almost completely developed but Well Pads 1 and 3 are less so. Well pad 4 A is still to be constructed. The developer claims that some structures have already been built and operated, and have been given permits. But this is not an argument to not

look into alternative options. An assessment should have been made to compare alternative locations for these two well pads (e.g. if these would be situated a few hundred meters more inland). There could be many environmental and social advantages, e.g. with respect to noise pollution, impact of water and soil pollution, protection of Lake Albert, protection of archeological heritage, risks associated with seismic activity. Putting the wells more inland would cause longer drillings and thus lead to more costs. However, one can also drill with a strong deviation, i.e. the length of the drillings might be more optimized.

- Include in the ESIA a justification for the selection of the location of the 4 well pads, clearly demonstrating that alternative options have been extensively studied and are not feasible, also and even if environmental and social concerns are considered, or….
- If feasible alternatives are still possible, then these should be clearly described and presented for decision making.
- If well pad locations cannot be moved (e.g. well pad 2), then its consequences should be clearly indicated, and alternative remedial options considered (e.g. not upgrading the airstrip, resettlement of Kyabasambu village, relocation of fuel tanks etc.).

3.2 Project infrastructure and alternatives: river crossings and roads

The feeder pipeline crosses rivers at various locations. However, the ESIA does not take into account the importance of river as the 'water life line', both for households (and related gender impacts) and cattle.

The (project support to the) alternative for the upgrade of Road 5 (at present scheduled right through the middle of Bugoma Central Forest Reserve) is a very positive part in this ESIA. However, although the Road 5 is not any longer going to be upgraded, the P1 road will be. 'Delisting Road 5' is now presented as a mitigation measure, but the P1 road also crosses the Bugoma forest partially, and its impacts are not given sufficient attention.

- Provide additional information regarding alternative options for the feeder pipeline routing that will potentially affect wetland/river flows. The river crossing works should be done in such a way that no harm is caused to these important water sources for people and animals.
- Provide more insights into the potential impacts of the upgrade of the P1 road (e.g. animal killings, impact on Bugoma forest) and the required mitigation measures.

3.3 Project design: wells and CPF

Limited information is provided on the design of the production and reinjection wells. Figure 2-12 of the Volume 1 ESIA (p. 2-19) suggests 3-3/8" spacing between borehole and casing for the shallow part of the well and even smaller spacings for the deeper parts. Such small distances that must be cemented may enlarge the risk of well integrity failure.
The design of the CPF is addressed in section 2.8 of the ESIA. Unfortunately, important details are lacking on the containment facilities of the plant. The same holds true for the well pads.
In general, final designs of project infrastructure are not yet available, or are unclear, e.g. regarding the jetty, the buffer-zones/distances between facilities, the safety checkpoint etc.

- Explain how integrity of well barriers and wells as a whole will be addressed. An associated risk assessment for pollution of the environment by well integrity failure should be included, both for the operational phase and the post-abandonment phase.
- In addition, details should be provided regarding the CPF on containment structures such as types of surfaces, drainage facilities and compartmentalization. Such information is important to deal with e.g. seismic risks. This also applies for the well pads as they are very close to Lake Albert.
- Final designs need to be in place before the project commences.

3.4 Physical environment impacts

Water and drilling waste

There are a lot of numbers in the ESIA documents on production, injection and required Lake Albert water, but the units and the numbers are not always consistent (barrels/day, m^3 per year, m^3/hour, etc.), which makes it difficult to compare them to each other and to get a clear overview. The order of magnitude of water to be extracted from Lake Albert (according to Volume 1B: 1.2 million average – max 2.5 million- m^3/year; the NTS mentions 390m^3/hr = 3.4 million m^3/year) is a lot of water. The ESIA refers to a Tullow study (2017) in which it is shown that all water extraction for all oil & gas development projects near Lake Albert would, overall, lead to a lowering of the Lake Albert water table of 2.2 mm (in total/per year?) 'only'. However, it cannot be verified whether the Tullow study took into consideration planned oil & gas developments in DRC and other large users/sectors. If Tullow did not consider the cumulative impacts, their conclusion for 2,2 mm would not be valid.

The same applies for the quantities of drilling waste. In Volume 4a, figures are mentioned of 1.900 m^3 WBM-cuttings, 8.100 m^3 SBM-cuttings and 26.000 m^3 'other solids' (not clear what that is?), but the NTS mentions 600m^3 per well, which would mean (31 wells) 18.600 m^3, of which 2/3 would be SBM cuttings, i.e. 50% more.

- Be consistent and transparent about numbers related to water extraction volumes and drilling waste quantities.
- The assumptions and calculations in the Tullow report of 2017 regarding water volumes required from Lake Albert should be provided to be able to verify conclusions.
- Regarding drilling waste, this is a large quantity and, given the difficulty in the past to deal with Kingfisher SBM-cuttings, the ESIA should provide more specific information on how, this time, adequate waste management would be ensured. A specific point of interest is the distance to the handling place (causing extra traffic).

Noise is legitimately presented as a serious issue (even after mitigation, the impact is rated as 'high'), given the high noise levels during drilling in an environment which is, particularly at night, very silent. The noise (and vibration) impact assessment is restricted to the communities, and does not assess potential effects on fauna.

- The ESIA proposes to sort the noise issues out with NEMA, but this should as well primarily be sorted out with the local communities. But in fact, there is no solution to mitigate the noise impact, but to accept it This does not imply that the company is given a carte blanche, but rather that an extra effort is required to look into alternatives (resettlement of village?) as it will be a very likely source of anxiety.
- The noise impact assessment on (aquatic) fauna is to be included, indicating whether, and how far the impact will spread.

Treated sewage effluent (p. 52 fig 7-4 and p 57 NTS) may create an impact of more water hyacinth growing in the lake. Therefore, irrigation of grassland with the effluent water around the CFP is suggested in the ESIA as a first option. Second option is to create an artificial wetland. Calculations on how much area is needed seem to be lacking. The proposed mitigation measure is apparently still under development. The smell of the treated sewage water for the village Kyambasambu can be an issue. And can it be assured that there are no pathogenic bacteria in the treated effluent which pose a health risk to local people?

- There is a need to describe the different alternatives in more detail, and in the ESMP at least one option has to be selected and elaborated. It is not recommendable that treated sewage, with a rather different composition of nutrients as compared to the water in Lake Albert, is entering the lake.

The disposal of hydrotest water (p. 2-29) considers one favorable option for discharge. What if biocides and corrosion inhibitors must be used and the water is biologically harmful? The ESIA recommends bioassay testing of the final effluent of pipe testing water before release. But is it only a recommendation or will it be done? How will the time required for the bioassay be bridged? Note that rather big volumes of water are at stake.

- The ESIA should provide more information on the how the disposal of hydrotest water will be dealt with in case it contains harmful elements.

3.5 Biodiversity impacts

Vulnerable species and habitats

The ESIA report does not contain detailed information (distribution maps, abundancy, trends) about the location of populations of vulnerable/flagship species like mud snail, Eastern Chimpanzee, Nathan's Francolin and Grey Crowned Crane. The ESIA states for example (p. 162 BIA): "*geographical extent of impacts will be local because effects are restricted to those areas immediately adjacent to road corridor….., with approximately 504 ha, or 1.2%, of potential habitat affected".* Without knowing where the population of for instance Chimpanzees has its territory, this is simply a wrong statement. In addition, it is not clear if important animals like the hippopotamus and crocodile live in the (papyrus) lagoon and if, and how they move around along the lake shoreline. In addition, the lagoon is an important refugium for fish species and a fish breeding zone.

Also missing is information on migratory routes of key species (if they are there) in the escarpment area (feeder pipeline) and the Buhuka flats and maybe even fish in the rivers.

- Show distribution maps of vulnerable species, otherwise this makes impact assessment of the proposed activities on these species only a guess.
- The ESIA should also provide information on migratory routes of key species, as *'The corridor is recognised as an important climate change refugium for a range of threatened species, which may become increasingly important for those species in the future, that is, within the life time of the Project."* (BIA, p 176)

Bugoma forest

The future for the Bugoma forest is bleak. The feeder pipeline (this project), the export pipeline, the international airport and the upgraded roads, including the increase of traffic will lead to more disturbance and more encroachment of the forest. Currently there are only two NFA guards for some 6000 ha. Currently, there is no biodiversity management plan at landscape level, to regulate influx, to enforce law, to monitor important animal species and preferably to develop ecotourism potential (e.g. bird watching, chimpanzee tracking and maybe cultural sites) which will help local people to gain additional income. It seems logical that CNOOC contributes in one way or another to such a plan as a mitigation measure. Note that the conservation of the forest not only depends on law enforcement, monitoring of important species and promotion of ecotourism. The population in and around the Bugoma forest (refugees from Rwanda and DRC and migrants from other parts of Uganda) all seek a livelihood. For that, among others, they convert forest land into agricultural land and they use biomass for charcoal. This is not a sustainable situation.

- If the Bugoma forest is to be conserved, a biodiversity management plan needs to be in place and implemented, and alternative livelihoods need to be created. This is a complex effort, in which all development projects (CNOOC, EACOP, airport etc.) and also the donor community and Ugandan authorities could play a role. Elements of such plans could be how to arrange effective monitoring and enforcement, availability of funds, training of staff, and upgrading the status of Bugoma forest to National Park.

Lake Albert

Also the future of Lake Albert, and especially its fish communities is bleak. Because of the influx of people (directly and indirectly caused by the project, see also 3.6 below), the demand for fish from Lake Albert will increase. This is also largely an indirect, but important impact. Currently some 30% of national fish production is from the lake and there is already over-exploitation. If nothing is done resources will dwindle, which will cause serious negative consequences for people who primarily depend for their livelihood on fisheries. But it will also be a general issue of food and nutrition security (less fish available which is a source of protein).

- There is a need for a fisheries management plan for Lake Albert, and cross-boundary cooperation would be necessary. CNOOC should contribute to its realization as a mitigation measure. Also here, the issue is bigger than just the impact caused by the Kingfisher project. And again here, the natural resource management aspects are closely linked with socio-economic impacts (livelihoods, food and nutrition security). The donor community could play a role e.g. in stimulating aquaculture.

3.6 Social impacts

Autonomous and project related population increase

The given population growth rates (Hoima: almost tripling between 1980 and 2002) represent a key challenge. In combination with livelihood dependency on fishing (80 % in Buhuka flats) and fuel wood (98.9% dependent on wood fuel, only 3% electricity) and the expectation that the Kingfisher project will boost this even further, directly and indirectly, this also represents a concern for and of the project (see also 3.5 above). Mitigation measures to try to manage indirect impacts of population growth, like fish stock depletion, logging/fuel wood production and biodiversity loss should be included in the ESIA, as they may be very important for the societal acceptance of the presence of the Kingfisher project in future.
The Kingfisher project is a relatively large development for the small, formerly isolated area, with a complicating international element related to the influx from/trade with DRC.

- The autonomous and project related population increase in the area is and will be huge, with related, serious risks with respect to fish stocks, forests (fire wood) and biodiversity (fire wood, poaching). Although only partially related to the project, it is emphasized that it is in the interest of receiving environment ánd the project to include these impacts, and mitigation measures, into the project and the ESIA. This may turn out THE key issue for this development.

Project affected people, land tenure and compensation issues

Quite a number of social issues was discussed in Hoima. Possibly some of these have been addressed in one of the 3 Resettlement Action Plans. These are not part of the ESIA and the NCEA did not have access to these RAPs (RAP 1 for facilities on flats, finalized and implemented, RAP 2 for feeder pipeline, finalized implemented and RAP 3, buffer-zone, 80% finalized). The RAPs approval falls under the jurisdiction of the Ministry of Lands, Housing and Urban Development and is thus outside NEMA's mandate.

Some issues of caution are mentioned below:

- It is not easy to make conclusions on how the project affected persons will be compensated, but they should be offered sustainable options like land for land and should be allowed to move outside the areas of their choice, if they can find it.
- The ESIA is not clear about the way 'communal properties' (like grazing land and water, used by the communities but not individually owned), will be compensated as these have a direct bearing on their livelihoods.
- The substantial presence of the Congolese and the Alur (also from Congo) can be of influence on land acquisition and compensation given the fact that there is the 'presence of ethnic tensions' on the Buhuka Flats (Pg 52-53 NTS). While the lottery/raffle system for recruiting local unskilled labor (with 60% of the jobs reserved for the local/affected villages) from the communities looks good for social harmony, it can lead to tensions given the different sub-ethnic groups in these communities. Care should be taken so that a particular subgroup doesn't assume that they are being 'marginalised' on the basis of their tribe.
- It is also suggested that 'directly affected people should be given priority to win construction phase jobs, subject to their meeting the necessary employment requirements'. While this might be the case, the developer should meaningfully tackle the question of local content by being local where possible (catering services, construction, etc).

- The above mentioned issues should be dealt with carefully, either in the ESIA or RAP implementation, to deal with community expectations, anxieties and uncertainties. The ESIA itself acknowledges this issue also through stating that "people fear the worst, including an influx of foreign and disruptive people, increasing pressure on land, corrupt practices, increased prostitution and disruption of family life, lack of fair compensation for lost land and increased opportunistic land acquisition by outsiders, including government" (pg 95 NTS).
- Livelihood restoration and improvement after resettlement is therefore of utmost importance.
- Particular attention and mitigation measures are required for vulnerable groups and closely related issues like gender-based violence, changing power relations between men and women, child labor, working conditions of workers (IFC PS 2), loss of cultural identity, emotional trauma etc.

3.7 Environmental & Social Management Plans

Although a large number of key aspects (in-migration/population growth, socio-economics, health/STD, waste management, biodiversity, water and unplanned events) are recognized and the potential impacts in general are realistically valued and rated, the (presumed effectiveness of) measures described to mitigate medium or high impacts are often vague, not-specific or not very realistic. In particular the measures listed to reduce social impacts (influx management, work force behavior management, etc.) or measures shifting significant mitigation responsibilities to NEMA/Ugandan Government (waste management, development of community services, management of increased access to vulnerable areas) seem far too optimistic and even a little naïve. As a consequence, the residual impacts of the proposed project are probably underestimated in the ESIA, which makes the ESIA a risky basis for informed and responsible decision making

For high impacts, very positive mitigation effects are expected/presumed from soft measures, as illustrated by some examples below:

- NTS p. 52 (pollution by CPF: 'pay attention');
- p.62 (in-migration: 'adequate influx management' unspecified);
- p.63 (local employment: '60 %, if possible, of casual jobs for local people, and they will be told it will be temporary');
- p. 66 (Mobile Men with Money/STD: 'workforce behaviour management').

This is also reflected in the ESMP's for the CFP and associated infrastructure (Volume 2) and the Feeder pipeline (Volume 3): actions are often not SMART and action parties vague. An overview table with the key impacts ('high' before and/or after mitigation) would have been very helpful, but is currently lacking. It is recognized that particularly social and increased access to e.g. Bugoma forest and Lake Albert will be extremely difficult to manage well.

In the documents it is indicated that for project impacts rated as 'high', it is up to the Ugandan Government to judge whether they are acceptable or not, and take responsibility. That is rather inacceptable, as normally the company is responsible for the project, including bringing down the impacts to at least a medium level.

- Potential significant/'high' impacts requiring more SMART mitigation measures are:
  - Control of in-migration (direct/workers and indirect/opportunity seekers);
  - 'Work force behavior management';
  - Managing 'boom-bust' scenario of construction (many jobs) to operation (few jobs);
  - Development/improvement local (community) services/benefits;
  - Waste management (in particular SBM-cuttings/hazardous waste);
  - Emergency Response (in particular worst-case scenarios);
  - Biodiversity protection/off set plans.

This implies that non-committal phrasing like "if mitigation measures will be applied…" and "subject to compliance of these requirements…" cannot be accepted for these high impacts.

- Responsibilities of CNOOC, sub-contractor and Ugandan government for mitigation measures be clarified and agreed upon, in particular in the ESMP.

An example of a mitigation plan that requires further specification (more SMART) is the In-flux management plan. This plan seems to deal only with influx to the well-pads and CPF. Regarding influx of people in the wider area, the BIA, p 178, states: *"An Influx Management Strategy and Framework Plan (Golder Associates 2014) has been developed to manage the potential influx of people into the LSA. However, this plan can only focus on those measures over which CNOOC has control, and to support the range of government and donor projects in Uganda aimed at socio-economic development and environmental conservation."*
It remains unclear however:

- how this translates to the potential influx of people along the (improved) roads in Bugoma forest,
- how the division of funds needed for the implementation of the plan will take place, (i.e. who will do what and who will pay, and is there evidence for real commitment?)
- what the effects of influx of people are on demand for fish from the lake and
- what is concretely done for biodiversity valued components to mitigate negative impacts of influx.

- Update and finalize the Influx Management Strategy and Framework Plan to identify appropriate measures to mitigate the expected in-migration from the presence of the project, addressing the above mentioned issues. This should include information on the monitoring mechanism of the implementation of the Influx Management Plan, such as enforcing measures in case of violation. And, possibly identifying and linking up with concrete government and donor institutions and projects to financially support relevant activities.

3.8 Unplanned events and emergency response

Chapter 10 of the ESIA report addresses unplanned events, but presents general descriptions without becoming specific for a socially, physically and biologically vulnerable and pristine environment like Kingfisher (except sections 10.3.5 and 10.3.9). The contents of this chapter are therefore unsatisfactory. The text suggests that additional information is present in reports that have not been summarized in the ESIA. This is another shortcoming. The suggestion is made in section 10-7 (p. 10-33) that CNOOC commissions an independent expert review of all the risk-related work before the completion of the final design.

The dependency of local communities on fishing, farming and local water wells is important with respect to the potential consequences of incidents/calamities. The ESIA addresses emergency response, but is not very specific on how to deal with larger incidents or calamities (e.g. blow outs, well leakages, vapour cloud explosions, risk of flooding, collapsing shoreline, earthquakes, landslides), except by explaining that the chance to have events like that is small. That is probably true, but if substantial quantities of oil would enter Lake Albert, the impacts for the local community (and biodiversity!) would be huge. It is not clear if the selected 'realistic worst case', used for the Emergency Plan is actually a worst case. Explaining 'a very, very small chance' as a 'zero chance' (so no plan B required) is a known mistake in the oil & gas industry, which should be avoided at all times.

Three topics are of additional concern:

- The risk of failure of the oil heating systems, which would lead to solidification of the oil (in the equipment, flowline, feeder line,..) is not discussed is the ESIA. How would such a situation be managed? Would it result in large quantities of (hazardous) wastes?
- Environmental risks related to the return flow of the produced water are not addressed while this water will be strongly contaminated even after its treatment. For example, spills of this water spread more easily than the produced oil and thus may have a wide spatial impact as the viscosity of water is much lower than that of the produced oil which has a very high viscosity.
- A third (although very unlikely) risk is the obstruction of production water injection. How would such a situation be managed, when all of a sudden, huge quantities of water cannot be reinjected anymore? Is there a risk for Lake Albert?

- Risks of unplanned events should be elaborated more specifically, with particular attention to the risks of failure of the oil heating systems, risk of circumstances where the production water cannot be reinjected (contingency plan?), risks of produced water spills and risks of a worst scenario event. This includes plans to deal with these, including budget allocated/reserved to compensate for potential damage caused.
- The CNOOCs intent to engage an independent expert review of all risk related works prior to final design is supported.

3.9 Energy/CO2 aspects

The topic of energy/CO2 footprint, greenhouse gases or climate change seems to be fully left out, which is not in line with IFC requirements to which the developer claims to adhere to. Greenhouses gases are mentioned, sometimes prominently e.g. in the heading of chapter 1 of volume 4a, but seem to be missing in the rest of the text. The ESMP refers to a Green House Gas Management Plan (e.g. 6.20), but in rather general terms. Special attention should be paid to the need to keep the Kingfisher oil (wax appearance temperature 63^{0}C) flowing and therefore at high temperatures (68^{0}C -92^{0}C), as this will influence the carbon footprint of the Kingfisher oil probably considerably.

For the economic/financial expectations for the project (and national and local governments) in the next 25 to 40 years, the ESIA refers to reports published in 2012. The ESIA seems to ignore that the world of oil & gas has changed dramatically over the past years (e.g. the Paris Agreement). It is unlikely that in the coming 25-40 years, the issue of climate change will not affect the Kingfisher project, financially and/or societal acceptance wise.

- Include an analysis of energy use, CO2 emissions and CO2 footprint of Kingfisher oil in the ESIA report.

3.10 Final general remarks for NEMA

Regarding international relations, agreements need to be in place in case of transboundary issues (oil spills, security, overfishing, conflicts etc.)

The NCEA learned that a Physical development plan (2019-2040) has recently been approved for the Buhuka flats by the Ministry of Lands, Housing and Urban Development, but has not been aligned with the ESIA findings. This should be adjusted, in order to take into account long term effects as the Kingfisher project will be there for at least the next 25 years.

Although it is not within NCEAs mandate to assess this project on its economical or financial feasibility, the NCEA wants to draw NEMAs attention to poorly documented and very/too? optimistic assessment of the impacts of the project in economic terms.
On page 64 of the NTS, the economic benefits of the project are described at the national and regional level. Very few numbers are presented, except for a reference to a study from 2012 and some economic 'multipliers' following from studies in the US, which are transferred to Uganda. Studies on the oil & gas sector from 2012 (well before the Paris Agreement), nor from regional benefits from oil development in the US, are an adequate basis to rate the economic impact of the project as 'high-medium'. On NTS p.94 it is stated that the local economic benefits are 'less certain' and depend predominantly on how the Ugandan Government will act.
In the ESIA more background should be presented on the economic benefits, or that part should be left out. This is particularly relevant because if the ESIA overestimates both the effectiveness of the mitigation measures for the negative impacts ánd the socio-economic positive impacts of the project, the basis for informed decision making becomes even more shaky/insufficient.

Annex 1: Request for advice (extract from email)

From: Isaac Ntujju <isaac.ntujju@nema.go.ug>
Send: fredag 28. desember 2018 13:02
To: Frank Eklo <frank.eklo@miljodir.no>; Ineke Steinhauer <Isteinhauer@eia.nl>

.....
As we wind up 2018, allow me extend our sincerest appreciation towards the Netherlands Commission for Environmental Assessment (NCEA) and the Norwegian Environment Agency (NEA) for the support (technical and financial) that you have extended to Uganda and NEMA in respect of the Oil and Gas Sector. Our institution and its personnel have frankly benefited much from our collaboration, to which we will be grateful for additional capacity building support as we still have quite a lot to learn on the go with the new developments taking shape in Uganda. Its my prayer that we can still be able to work smart and more effectively together with the onset of the new year, 2019.

By way of updates and the necessary outlook for the next year, allow me highlight the following for your consideration.
After the successful conduct of the Tilenga Joint review, we were able to collate the review reports from NEMA, the NCEA, the NEA and the Lead Agencies. The common denominator in all the reviews was that the ESIA was short of the necessary acceptability and consequently a series of communications were made to the Developer (including meetings) to which an improved document (ESIA report) was prepared. The improved report was subjected to public scrutiny in accordance with the law and a Public Hearing was held to the same in November 2018. The public disclosure (and Public Hearing) yielded several other comments and the report has finally been prepared by the presiding officer. The task for NEMA now is to conclude this review and prepare a robust set of conditions against any approval that NEMA may give for the Tilenga Project. Our plan for now is to hold a series of meetings and one or two workshops with Lead Agencies in early 2019 to conclude the Tilenga ESIA report review.
The Kingfisher ESIA report was submitted by CNOOC on 20th December 2018, and yes it is just as voluminous as the one for Tilenga. A copy of this ESIA has been shared via WeTransfer for your use/consideration. The review process shall begin right at the start of the new year and am optimistic that drawing from the Tilenga lessons, this Kingfisher ESIA review will be relatively easier with better planning. The ESIA review will ideally follow the same pattern that the Tilenga ESIA has had although with less ambitious timelines.
We have also been put on reliable notice that in early January 2019, the East African Crude Oil Pipeline (EACOP) ESIA report will simultaneously be submitted to NEMA in Uganda and NEMC in Tanzania. Being a linear project traversing the two countries we are mindful of its uniqueness as it will call for more ingenuity and collaboration between the agencies handling ESIA matters in Uganda (NEMA) and Tanzania (NEMC).

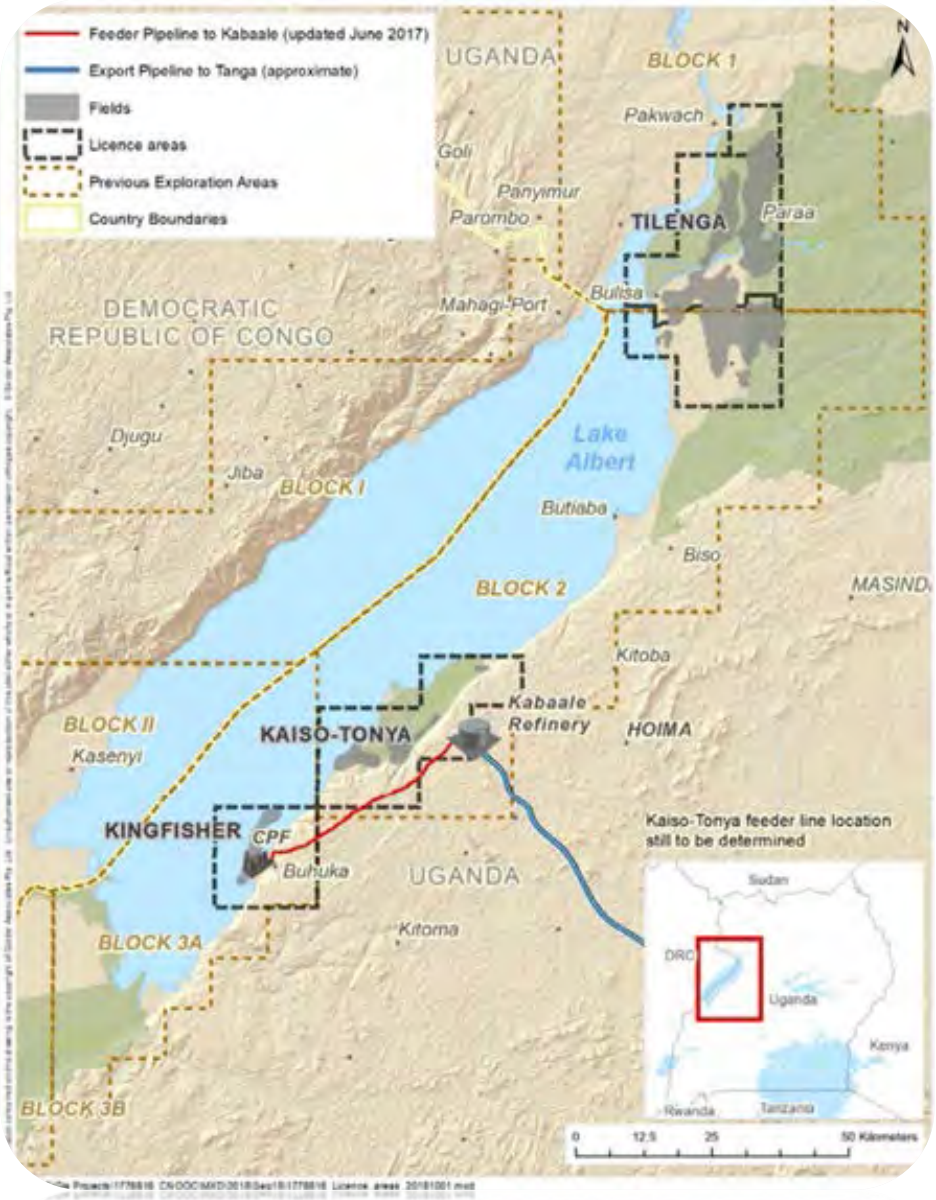
I have discussed the above with my superiors (including the Executive Director) and we would be grateful for the support / expertise that the NCEA and the NEA can extend to help us handle these projects to excellent conclusion. Kindly consider this request and incorporate in your 2019 schedules/plans, a component towards supporting Uganda (and possibly Tanzania) to build the necessary capacity to handle ESIA reports for such projects.

Annex 2: Programme of visit

Time	Activity	Responsible entity
25 Feb. Field visit all day	Project briefing Bugoma Camp	CNOOC
	Site visit King Fisher and selected parts of Pipeline	CNOOC
26 Feb. Morning	Opening remarks: • NEMA • NEA • NCEA	'Uncle' George… on behalf of ED NEMA Ms. Gro Øfjord Ms. Tanya van Gool
	Presentation on planning of review: • 13 March (latest date for lead agencies to submit comments • 22 March: preliminary feedback to developer • April: preparation of disclosure material • 24 May: Announcement Public hearing • 31 May: closure for submitting comments • 11-14 June: public hearings Hoima and Kikuube • 30 July: final decision	Christine Ainabyona, NEMA
	Video and presentation by CNOOC (copy available)	Vice president …
	Round of introduction	Around 30 from lead agencies, 10 from CNOOC, 7 from ESIA consultants, NEA and NCEA
	Presentation by ESIA Consultant & team, followed by Q&A	Mr Brent Baxter, Golder South Africa and Eco & Partners Uganda
26 Feb. Afternoon	Perspectives from NEA and NCEA team members, followed by Q&A and discussions	Ms Gro Øfjord Ms Ineke Steinhauer (on behalf of Mr Bopp van Dessel) Mr Tom Ogwang Mr Jasper Griffioen Mr Arend Jan van Bodegom
27 Feb. Morning	Presentations Lead Agencies (Chair Jerome, NEMA): • Ministry of Lands, Housing and Urban Development • Ministry of Agriculture, Animal Husbandry and fisheries • Ugandan Wildlife Authority • Petroleum Authority Uganda • Ministry of Energy and Mineral Development • National Forest Authority • Ministry of Water and Environment, Department of Environmental Affairs • Ministry of Environment and Water, Department of Water Resource Management • National Fisheries Resources Institute • Ministry of Gender, Labour and Social Development • DLG Kikuube • NEMA Hoima DLG, Office of the President were also present, but did not present.	Ms Jacquelyne Nnassuna Mr Avezino….. Ms Justine Namara Mr Samson Okot and Mr Joel Tumwebaza Ms Caroline Aguti Ms ? Mr Gilbert…. Mr Pascal…. Mr Robert Egessa Mr ? Ms Gertrude Nsita Ms Patience ….

Time	Activity	Responsible entity
27 Feb. Afternoon	• NCEA working group meeting & discussions • NEMA started guided review with the lead agencies, and • 3 groups were formed to identify priority issues (social, biodiversity and infrastructure)	
28 Feb. Morning	• NCEA presentation of preliminary findings • Thereafter, NCEA departure to Kampala • NEMA: presentations of findings of the three groups (continued in the afternoon)	Ms Tanya van Gool
28 Feb. Afternoon	NCEA debriefing at Netherlands Embassy	Mr Henk Jan Bakker (Ambassador) Mr Joris van Bommel (HOS) Mr Stephen Bayite Kasule (Trade & Investment/Private Sector Development)
28 Feb. Evening	NCEA departure	
1 March All day (without NCEA)	Discussion of the reconsidered institutional findings: • Discussion of Way Forward • Tasks for each Lead Agency • Closing Remarks	

Annex 3: Map of the area



Annex 4: Photo selection








Photos by I. Ntujju (NEMA) and the NCEA.