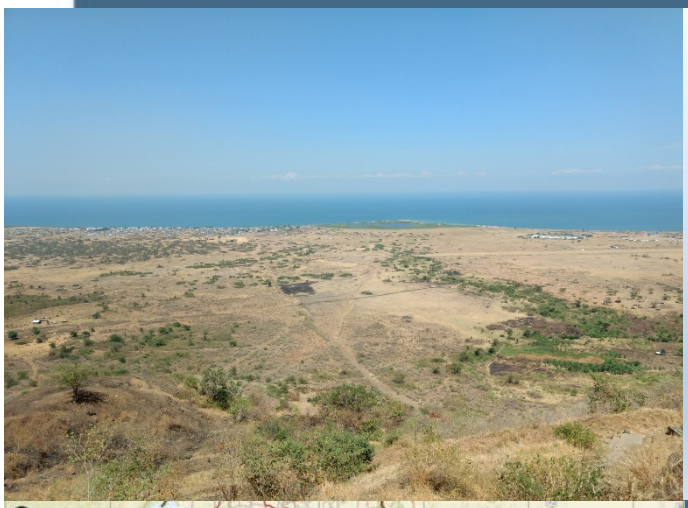
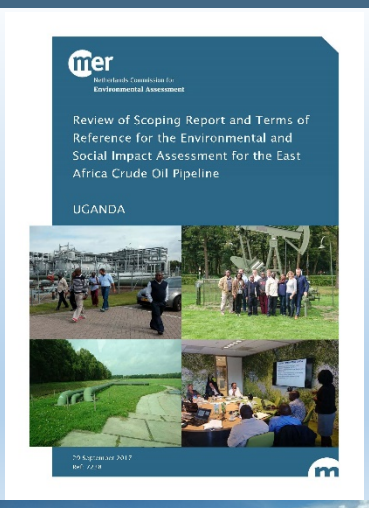
Netherlands Commission for Environmental Assessment

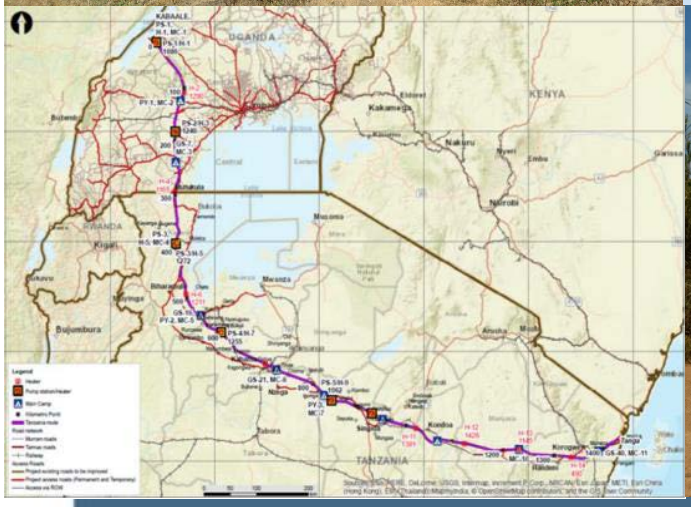
25 years

Advisory Review of the Environmental and Social Impact Assessment for the East Africa Crude Oil Pipeline (EACOP)

UGANDA







27 June 2019
Ref: 7228

Advisory Report by the NCEA

Title	**Advisory Review of the Environmental and Social Impact Assessment for the East Africa Crude Oil Pipeline (EACOP) – Uganda**
To	The Ugandan National Environment Management Authority (NEMA)
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Date	27 June 2019
From	The Netherlands Commission for Environmental Assessment
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1. Introduction

1.1 Background

The East African Crude Oil Pipeline (EACOP) will transport oil from the delivery point in Hoima District, Uganda, to a storage tank facility in Tanga District and a nearby offshore tanker loading platform, on the East African coast of Tanzania. The EACOP project part on Ugandan territory includes:

- A 296-km-long, 24-inch-diameter buried pipeline from the future Kabaale Industrial Park, in Hoima District, to Mutukula near the border with Tanzania. The pipeline will be insulated and will have an electrically heated cable on the pipeline to keep the temperature of the oil at 50°C or warmer so the oil will flow in the pipeline.
- Aboveground installations which consist of:
  - two pumping stations to keep the oil moving through the pipeline;
  - 19 valves at key locations where the oil flow can be reduced or stopped;
  - 4 electrical substations, collocated with valves, to power the electrically heated cable.
- 6.8 km of new and upgraded permanent access roads and 8.3 km of new and upgraded (temporary) roads for getting to construction facilities.
- Construction facilities consisting of 4 main camps and pipe yards where pipe and equipment will be stored and construction workers housed.

1.2 Request of the Ugandan National Environmental Management Authority (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 capacity building workshop for Ugandan environmental pillar institutes 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 the 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. The review findings and review approach are documented in a report (also available at the NCEAs website).
- In February 2019, the NCEA participated in a joint review retreat organised by NEMA for the quality assurance and review of the ESIA for the Kingfisher oil development project in a similar setting as compared to the Tilenga review. NCEA's findings are documented in an advisory review report and can be accessed at the NCEA's website.

It is within this cooperation framework that the NEMA requested the NCEA support in reviewing the ESIA report that was submitted to NEMA in January 2019 (see Annex 1 for request and proposed review strategy).

The NCEA agreed to again perform an independent review of the Ugandan part ESIA of EACOP, seen NCEA's previous involvement in the scoping report and ToR for the EACOP ESIA, but this time from a distance for logistical and budgetary reasons. It was proposed to present the NCEA findings during the joint review retreat planned in the first week of July 2019 in Fort Portal, by the NCEA technical secretary on behalf of the NCEA working group. A Skype meeting could also be part of the programme if needed, to allow for the NCEA working group members to provide clarifications. This proposal was agreed by NEMA.

1.3 NCEA expert group and approach taken

This report is prepared by a working group 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 back-ground of the individual experts is presented in the Colophon. The composition of the expert group is similar to previous NCEA reviews on the Ugandan oil development projects as performed between 2017 and early 2019.

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. In addition, the NCEA comments on the scoping report (28 September 2017) have been used as a reference framework. The working group members also used their own practical experience in reviewing ESIAs for comparable projects.

For the preparation of this advice, the group members were not able to visit the project site and meet with stakeholders in Kampala and along the pipeline route. The review is done based on the information contained in the ESIA report and site visits performed to Uganda previously in relation to Tilenga and Kingfisher. Not having visited the EACOP pipeline route and the receiving environment however, the working group cannot guarantee the relevance of all observations it has made in this advisory review.

Based on discussions held during meetings at the NCEA office, the working group drafted this advisory review report with the following aims:

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

2. Main review findings

2.1 Overall conclusion

When comparing EACOP with the other ESIAs for Tilenga and Kingfisher, the NCEA is of the opinion that the EACOP project, if executed in the way it is described in the ESIA report, would most likely not lead to major or unacceptable impacts. The proposed pipeline technology and methodology, and the general environmental and social approach and standards in the ESIA report do not immediately lead to red flags. The ESIA contains a wealth of good quality and detailed information. On a number of topics, including e.g. concrete figures on expected employment numbers and local business opportunities, the ESIA is good and has followed the comments to the scoping report.

On the other hand, the NCEA has the impression that the ESIA in general, and the Non-Technical Summary (NTS) in particular, are biased in stressing the positive impacts and downplaying the negative ones. Economic benefits are highlighted and spelled out, while potential negative effects are concluded to being insignificant without proper, concrete, transparent assessment or justification. The ESIA is difficult to read, focuses insufficiently on key issues and fails to facilitate decision making. The ESIA report provides a lot of methodological descriptions and excessive baseline characterizations, but does not become concrete. The assessment processes are not very transparent and many questions remain.

However, the NCEA felt that it is not helpful to recommend NEMA to ask the ESIA consultants to provide more details given the already enormous volume of the ESIA report. Instead, the NCEA decided that it could contribute more effectively to a better ESIA by mentioning a limited number of key issues in Paragraphs 2.2 and 2.3. that need further attention. Chapter 3 subsequently provides more background on each of these key issues, including corresponding recommendations. Chapter 4 mentions some other observations.

2.2 ESIA as a decision making tool

The ESIA report is not fit for purpose, namely facilitating informed and adequate decision making:

- The ESIA main document consists of 1011 pages (excl. the 2600 pages of attachments), which makes it difficult to read and understand it properly. Because of the size, it is inevitable to pay less attention to sections, skip them, or skip fairly large parts.
- The ESIA document/process is not transparent: it is impossible to follow how potential impacts have been assessed, mitigated and made acceptable. Particularly smart maps, highlighting Valued Ecological Components (VECs), sensitivities, impacts and solutions, are missing to present the reader an overview.
- The ESIA is not 'convergent': it presents a wealth of data and details, but fails to analyse these data in such a way that the key issues come out. The process to identify potential impacts, weigh them, find mitigation if required and motivate why impacts are acceptable after mitigation is not transparent. In Chapter 1 (Introduction), this assessment process is described as the objective, but the authors, and as a consequence the readers, get lost in the quantity of data and pages. Summaries of the key issues after every step of the process would have helped not to get lost. The information on what needs to be done next in concrete terms to assure an environmentally sound and socially acceptable project

therefore is not presented in a clear way and vanishes in the amount of information provided.
- The NTS, but also the Executive Summary, is biased in the way it is written and justified (lack of justification actually). The conclusion that there will be important positive (economic) impacts and no significant negative impacts comes out of the blue.
- The elaboration of many mitigation measures is postponed to (management) plans still to be written. Nevertheless the effectiveness of these, still unknown, measures is assumed to be sufficient to bring possible negative effects to a low and acceptable level.
- The ESMP does not provide a key-issue table or an overview of the most important residual impacts. To manage risks and impacts of the project, the ESMP refers to 20 management plans still to be developed. As such the ESMP is not an ESMP yet. The ESMP refers to attachment E4, which presents a long list of measures to be included in the management plans to be developed. Attachment E4 includes a lot of sensible measures. As this list is 'measures only', it is very difficult to find – an overview of – the connection between (potential) impact, measure and (acceptability of) residual impact. Also it is somewhat striking that the plans for the operational phase are often not there albeit that the impacts will presumably be small (p E4-37 and further).

2.3 Key potential impacts requiring better assessment

Content wise, according to the NCEA, the key weaknesses in the ESIA are the following:
- The ESIA and its NTS raise high expectations with respect to jobs and other economic benefits. Based on the provided data and (lack of) reasoning/justification, this seems exaggerated. The number of jobs, suitable for local workers, is probably very limited. In addition, all the investments are tax payer money, of which the major part is paid to non-local parties and workers. By raising (unjustified) expectations, future disappointments will be created.
- The proposed technique for water and wetland crossings (open trench) has the potential of significant negative impacts, particularly in wetlands. This seems to be ignored and the ESIA report does not make clear that the proposed technology is acceptable and for what reasons. Also some other water-related issues are not fully clear like potential conflicts between water needed for the project and water supply for people and animals.
- The ESIA does provide information on ecosystems that will be disturbed, particularly habitats for species of conservation concern and migration routes, linking project activities to potential impacts on biodiversity. However, some biodiversity concerns remain, like the effectiveness of the mitigation measures for chimpanzee protection and impacts on the Taala Forest Reserve.
- The situation with landownership seems tricky: proposed mitigation measures are too vague (or mitigations/solutions claimed to be included in future plans). It is not sufficiently substantiated why the impacts will be negligible.
- The energy/CO2 paragraphs are insufficient: most emission sources are left out (only the 'potential' use of heaters in future is taken into account), the calculations are not transparent and the outcome seems unrealistically low. All power for the Uganda part of the pipeline comes, for now, from the Tilenga CPF. It is not clear whether this has been accounted for in the Tilenga ESIA energy/CO2 figures, leaving doubt as to the overall CO2 emissions of the cumulative development (Tilenga, Kingfisher, EACOP, future refinery).

3. Elaboration of key issues and recommendations

3.1 Non-technical summary and executive summary

The NTS looks nice, inviting to start reading. The photos are beautiful, but not functional in explaining the key issues of the NTS and ESIA. (Info) graphics presenting the amount and complexity of data and issues are missing. Only a very basic geographical map is included. This is a missed opportunity as maps are very effective in clarifying the key issues, making these more accessible than the text itself, as is used now.

There is an extensive baseline description: current situation as to physical environment, social conditions etc. without connecting it to the impacts of the project (p. 8-19 of in total 27 pages). Only at the section 'stakeholder concerns', part of the potential impacts is dealt with, e.g. the measures for work force management during construction. But this part is more a report on the stakeholder consultations than a summary of impacts and mitigation measures.

Regarding impacts: the positive impact table is detailed and twice as big as the negative impact table. Positive impacts seem to be presented (far too) rosy. The negative impacts are only mentioned in a very superficial and reassuring way (unspecified numbers of negative impacts only), without explaining why the reassurance is justified. The negative (cumulative) impacts have been downplayed, like the high population increase in project areas like Hoima and the negative consequences of such a big rise in population. Moreover, the numbers in Table 2 on the NTS: 'Number of impacts assessed and mitigation measures' differ from those in Table 11.3-2: 'Impacts assessed and mitigation measures' in Chapter 11, Summary and recommendations, which does not add to the credibility of the reassurance given about the impacts.

The NTS refers to a long list of additional plans, still to be developed, to further reduce and manage impacts and address stakeholder concerns. It is not clear how adequate they will be, nor when exactly they will be developed other than 'prior to commencement of construction'.

- The NTS states, but does not justify, that after mitigation no significant residual impacts are predicted. Graphically highlighted messages are mainly positive or reassuring. The summarising recommendations are benefit-oriented only. The NTS does not explain what the key concerns are. The NCEA recommends that at least the NTS and Executive Summary be re-written, to provide a good and easily understandable overview of the most important impacts of the EACOP project and corresponding mitigation and/or compensation measures. This can be done through including among others:
  - a paragraph summarising the key VECs and sensitivities to keep track of the elements which are important as a basis for the ESIA;
  - more and more detailed maps to present the vast amount of data in an accessible way;
  - an overview of which impacts are key, which real measures will be taken and which impacts will be residual and have to be accepted as the consequence of the project. It is not realistic to come to the conclusion that EACOP has only benefits and will not cause any negative impacts.

3.2 Expectation management

The expected employment figures quoted in the activity description seem realistic: 135-220 unskilled labour and 1250-2200 skilled labour during construction (no figures for operation, but numbers will be much lower). It is not clear what 'skilled' means and how many jobs can be filled by local people. Using a literature reference, these numbers are multiplied by 7.8 to arrive at an extrapolated figure for total direct plus indirect employment. Assumptions are made about the capital expenditure spent locally (40%). The question where this money is coming from (i.e. the Uganda Government) is not discussed. The overall benefit of the project as presented for the Uganda economy seems a bit one-sided. The promise of local content is far-fetched and will only raise people's expectations based on the previous projects.

- It is crucial to manage people's expectations by telling them what is feasible and what is not. Therefore the NCEA reiterates the recommendation done at the scoping stage: 'Provide upfront, clear, concrete and well communicated procedures for provision of goods and services, hiring labour, including conditions and duration. Honest and realistic estimates should be provided in regard to labour requirements for the project, as well as training and transfer of knowledge'. This could be part of the still to be developed 'Labour management plan' (Table E4.2-10 appendix E) and the 'Procurement and supply chain management plan' (Table E4.2-12 appendix E).

3.3 Water and wetlands crossings and water use

The ESIA does not make clear why open trench river crossings are chosen as the way to go. This is critical as major rivers typically come together with wide wetlands. Chapter 3 (p. 3-32) seems to discard other options based on logistics and costs mainly. Regarding the sensitivity of major rivers and associated wetlands for the pipeline crossings, the NCEA has taken a more detailed look (Annex 2 gives arguments and background information), leading to the conclusion that the issue is strongly underrated and specific plans and alternatives should be presented in the ESIA.

In 8.6.2.1, a number of potential impacts, particularly at river crossings, is described. At 8.3, mitigation measures, no alternatives are mentioned for open trench crossing for (some) rivers. The (potential) need for horizontal drilling alternatives is neither mentioned, nor discussed. It is stated that, applying generic mitigation and preparing a number of plans (biodiversity plan, construction plan, etc.) will result in 'no impact'.

- Given the sensitivity of the rivers and wetlands, the ESIA should elaborate in detail the way in which the crossings of the major rivers and associated wetlands will be done. A particular element of attention is how stretches having a water depth of 2-3 meters will be crossed. Project alternatives should be considered including the different construction techniques: open-trench, auger drilling, digging or drilling a tunnel. If open trenches remain the preferred option, the NCEA recommends to consider rigorous filling of the trenches (in order to avoid that the pipes lie bare during part of time) instead of the proposed natural filling of the trenches in the turbid streams as the material may easily erode (see 2-45). In addition, cathodic protection measures can be considered when the pipe lies under surface waters (currently unclear whether or not applied, 2-66).

The ESIA states that the pipeline crosses through several water courses and wetlands, but does not specify whether there are water sources which use would be restricted to the communities and for how long. If so, the ESIA does not specify how the project will meet the water demands of the communities especially where the water source is also the source of their livelihood activities like brick making, vegetable growing, cattle grazing/drinking which largely depend on these water sources.

P 761 states that 'numerous dams and potential watering points for livestock were identified along the RoW' and mentions on P. 762: 'During the construction period, access restrictions along the RoW may cause temporary loss of access to these dams and watering points. This could directly impact upon the livelihoods of households engaged in livestock rearing. Households solely reliant on livestock rearing, with no alternative means of income, will be most vulnerable. The impacts will be short-term and will affect some households within the PACs. Due to their short-term nature and localized extent, before mitigation the impacts are considered not significant'. On page 767, reference is made to generic mitigation measures, the resettlement action plan and stakeholder engagement plan and grievances procedure (section 8.13.3.2 p 764) but there is no description of how to deal with temporary water restrictions for animals.

The same way of reasoning is applied to the loss of natural resources (e.g. honey collection). Page 757 states: 'The impacts will be long-term and will affect entire PACs. Poorer households (e.g. landless, widowed, single female and elderly headed households) who are particularly dependent on natural resources may be more vulnerable. Owing to their small extent, before mitigation the impacts are considered not significant'.

In general, project-related water requirements are quite high and require new boreholes. It is not clear whether that will cause conflicting water interests. Compare p. 6-75, figure 6.4-9, appendix A6 (p A6-133), p. A7-15 and p E4-11. The remark at the last page (Table E4.2-4 'Natural Resource Management Plan' mitigation measure WTR 28) is reassuring but, given the fact that there is often water scarcity in the project area, this issue requires due attention.

- Regarding potential interference between the water supply for the project and that for the local communities, the NCEA recommends to specify where and when this could take place, including its duration and who will be affected. The mitigation and compensation measures for disturbing watering points for animals during construction are not sufficient. Impacts could be highly significant for individual farmers. The same holds for loss of natural resources. The ESIA report should further elaborate what provisions have been put in place to cater for activities directly linked to some of these water sources, like brick making, sand mining, vegetable growing and communal resources like grazing.

3.4 Biodiversity concerns, chimpanzees and Taala forest reserve

In its comments on the ESIA scoping report, the NCEA asked for migration routes in relation to the pipeline. On p. 3585 of appendix L reference is made to this demand and section 8 and appendix E are mentioned as source of more information. The only reference is the area between Wambabya and Bugoma Forest Reserves which is an important chimpanzee

migration corridor. Alternatives for the pipeline route have been considered but do not turn out to be better; 'The main proposed route (V5 at the time of the study) was found to be the most viable option in conjunction with robust mitigation measures to reduce chimpanzee disturbance during pipeline construction (see Section 8 for proposed mitigations in the area)'. Therefore this seems to be dealt with in a satisfactory way, but some doubts remain whether, over the whole stretch of almost 300 km, the Wambabya-Bugoma corridor is the only (important) animal migration route that is traversed.

On p 584 -586 problems related to chimpanzees are described in the Wambabya-Bugoma corridor. Mitigation measures for chimpanzees are (p 599): 1) chimpanzees movement and activity surveys starting a year before construction of the pipeline, 2) partner with forest conservation initiatives within the Albertine Graben to implement forest management and restoration plans with involvement of communities to improve sustainable management of the forests, promote connectivity between forest blocks and improve management of forested protected areas. In principle this seems to be satisfactory but it is not clear how substantial the announced support will be.

- The NCEA recommends to confirm in the ESIA that there are no other important animal migration routes apart from the Wambabya-Bugoma corridor. In addition, it is recommended to enhance the proposed mitigation measures for chimpanzees, through specifying what the concrete support will be in terms of money or services provided.

The Taala Forest Reserve (FR) (KP 78-82.5) is affected, where the pipeline crosses the Forest Reserve and, maybe more importantly, through more than 1 km of wetland just south of the FR (Kp 83-84, fig 6.4-3 on p. 310). The reserve was gazetted because it serves to protect the drainage systems of Kitumbi and Lugulima rivers that flow into Kafu river (p. 309). The ESIA report does not clarify why the pipeline goes through the FR anyway and whether alternatives have been considered.
The ESIA is also not clear about whether or not the construction of the pipeline in the wetland just outside Taala has any consequences for the hydrology inside the FR (e.g. long-term disturbance of the hydrology?).
Being gazetted, the Taala reserve is a sensitive area. Table 9.5-1 on p. 951 does not mention it at all as sensitive. The risk of oil spill for the forest reserve and adjoining wetland is not made clear. There is a valve at Kp 79 (p. 2966) but the next valve is only at Kp 104 (p. 2968). In case of an oil spill it is not clear how much oil will be spilled and how far it can get taking inclination/slopes into consideration. (Oil spill in fig 9.5-1 on p. 947 shows some parts with high sensitivity between KP 70-90).

- The NCEA recommends to explain why the pipeline passes through the Taala FR and whether alternatives have been considered. The potential consequences for the hydrology inside the FR and the water catchment function of the area should be clarified, including what has been done to mitigate risk of oil or chemical spills (currently there is a restricted number of valves near Taala and sensitive areas in general, which could be reconsidered).

3.5 Landownership issues, compensation and resettlement

The pipeline will pass through three kingdoms (Bunyoro, Koki, Buganda). Most people, especially in Buganda, are on kingdom land and have leases. This might bring in problems when it comes to compensation. Who will be entitled to compensation?

The pipeline will pass through agricultural land (over 70%). This is a serious issue when it comes to food security in the region.

Formation of Communal Land Associations is not a common thing in Buganda but even then it might be manipulated by the elites which would cause more tensions and conflict distorting the harmony in these communities. Buganda is a multi-cultural region with many ethnic groups, how would a communal land association cater for such diversity?

On land acquisition, the ESIA states that contractors will be required to assess and mitigate potential impacts consistent with the regulatory and IFC requirements and manage associated land access in compliance with national and international standards, but this should rather be the developer's responsibility.

There will be 222 pipeline crossings. Construction for all crossings will require a temporary workplace area of approximately 1.5 ha. The ESIA does not mention how long this would take and potential consequences for communities who would be affected by such developments.

The ESIA also states that 'The number of PAPs, with regards to temporary and permanent resettlement related impacts, is estimated at 300–400 households. These households will be physically displaced, permanently if located within the RoW, MCPY *(main camps and pipeline yards)* or AGI *(above ground installations)* land requirements. An estimated 1700–3000 households will be economically displaced'. This does not give insight in the total number of people affected.

There is confusion on the total land take. Under 2.5 Summary of Project Land Requirements, on p. 3470, it is 602 ha, while on p. 8-241 it is 1330 ha.

From the list of concerns, expressed by stakeholders and the answers provided, it becomes clear that very few concerns have been addressed in concrete terms (Chapter 7 and Appendix C). The standard answer to concerns (resettlement, mitigation, social management, Project Induced In-Migration management, traffic management, national content, etc.) seems to be referral to plans still to be developed. It is not clear how satisfactory these meetings have been to the stakeholders. The ESIA does neither provide the background nor the substance to check how valid the 'no worries' claims are.

- Lessons learned from previous projects have demonstrated that concerns related to land ownership and compensation bring fears, anxiety and valid concerns to stakeholders which should not be taken lightly. The NCEA therefore recommends to address, for instance in the still to be developed Resettlement Action Plan (Table E4.2-9 of Appendix E), the following issues to remedy the observations made above:
  - Utmost care must be taken in case of formation of communal land associations.
  - Standards regarding compensation should be clearly and explicitly explained to the stakeholders to manage their expectations. Just referring to 'national laws and international standards' is not enough.
  - Land access management should rest on the shoulders of the developers and not on the contractors for accountability purposes, since the contract is between the developer and the contractor.
  - Specific information should be given regarding how pipeline crossings will impact on the surrounding communities, including its duration.
  - Regarding physically and economically displaced people, it is recommended to reveal the total number of people instead of households, which gives the break down to cater for vulnerable groups (e.g. women and elderly people) in those households.
  - Provide clarification on the total project land take.

3.6 Energy/CO_2

For any oil and gas project, stretching a number of decades into the future, the present international discussion and agreements (amongst which the Paris Agreement) with respect to energy, CO_2 and climate change are of key importance. A changing global perception towards the use of fossil fuels may significantly change the (boundary) conditions for oil development. A minimum requirement for any project and ESIA, is a careful and detailed inventory of all CO_2 emissions by the project, that includes all parts of the project ánd the overall, cumulative emissions of the development. Based on that inventory, mitigation measures can be developed to minimize the emissions. This remark has been made in previous ESIA reviews by the NCEA (Tilenga, Kingfisher) as well.

This ESIA does neither present such inventory, nor mitigation measures. Without identifying nor quantifying the sources of greenhouse gases, the ESIA states that the main sources would be the bulk heating (possibly required later in the project) and that all other sources are negligible. Emission figures are presented for this one aspect only, claimed to be 11-18 kton CO_2/year, without the underlying calculations or assumptions. This figure cannot be checked, but seems very low.
All power for the Uganda part of the pipeline comes, for now, from the Tilenga CPF. Has this been accounted for in the Tilenga ESIA energy/CO_2 figures? And what will be the overall CO_2 emissions of the cumulative development?

- The ESIA should provide complete information on CO_2-emissions, in order to enable a check of the calculations and assumptions. It should also mention and discuss cumulative greenhouse gas emissions for the overall Uganda oil development (e.g. in relation to heat generation for EACOP at the CPF-Tilenga).

4. Observations on other issues

4.1 Alternatives

The NTS mentions three fundamentally different corridors (Kenya North, South and Tanzania), while the decision for the Tanzanian route has been taken already years ago and the other two options are outside the scope of this ESIA.

The development and improvement processes described in Chapter 3: 'Alternatives' reflect more a process of fine-tuning of pipeline routing, construction and technology/techniques, establishment of mitigation measures, rather than project alternatives. In general however, the process of zooming in, step by step, onto the ultimate pipeline route is logical and a best practice approach and seems to have been done in a careful way.

Alternative options that have not been presented sufficiently are related to the crossing of rivers, wetlands and Taala Forest. The NCEA has mentioned these issues already in paragraph 3.3 and 3.4. and will therefore not provide an additional recommendation here.

4.2 Decommissioning plan

It is stated that the decommissioning plan will be prepared at a later stage (p. 2-68) and that the 'project components will be decommissioned based on Ugandan regulations and standards and international standards and protocols'. Best practice would require that the principles for decommissioning be arranged now, describing the desired situation after project closure before the project starts.

- The NCEA recommends to include a decommissioning plan in the ESIA report, clearly stipulating who will do what and when (issue of liability). This would also make it more easy for affected communities to know whom to approach in case there is breach of contract by the developers and operators.

4.3 Oil spills and emergency response

Appendix I on oil spill modelling is of good quality. The assumptions made are logical and sound, where they tend to be worst-case when it comes to solidification of leaking oil. Attachments I1.2+3 are impressive and the map after p I1-49 presents a nice summary.

In 9.3. mitigation measures are mentioned as to design, construction and operation. One example is the construction of 19 intermediate block valves. During operation the project still depends almost completely on good design (which is of course very important). There is also a pipeline integrity management system (e.g. maintenance of the pipeline).

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? In addition, when waste streams and energy needs are discussed, no quantities are mentioned. It seems

as if waxy waste streams will not occur (p. 2.65), which is highly unlikely. Treatment or disposal of waxy waste streams is not clear.

- Although the NTS speaks about an emergency response plan (p. 23 and 24), this plan is not yet part of the ESIA. Therefore the NCEA recommends to indicate at what point it will be ready, how its enforcement will be realized and how it relates to the Pollution Prevention Plan. The emergency response plan should specifically address the measures taken in case of a failure of the oil heating system.

4.4 Minor comments as to presentation of information

- There is a lot of non-functional repetition in the document(s) (e.g. NTS, Executive summary and Chapter 11 are almost identical). Method and process descriptions and general intentions with respect to the ESIA are repeated too often.
- The use of acronyms is extensive. If one does not read the full document page by page, a lot of time is lost in leafing backwards to look for the meaning of the acronyms.
- The table of contents only mentions chapter and section numbers, not the page where it can be found. There is no continuous page numbering. One has to scroll down until the start of the chapter one wants to consult, making the document inaccessible.
- Maps and graphs have low resolutions (e.g. 6.4.2-6.4.4) and are often small, which makes it difficult to read them.

Annex 1: Request for NCEA support

'The East African Crude Oil Pipeline ESIA was forwarded to the various lead agencies and has also been reviewed internally at NEMA. You may be aware that this EACOP project is quite unique with its linear nature yet has to be developed in two countries (with neighboring Tanzania). Attached herewith as well is a schedule that has been developed for its review process. We have also discussed on exploring avenues of collaboration with the National Environment Management Council (NEMC) of Tanzania – since this is an integrated project whose ESIA and development cannot/should not be disintegrated to be considered in isolation. We would thus welcome your support on this project as it is very different from the other two'.

Isaac Ntujju, principal environmental inspector at NEMA dd. 7 May 2019

REVIEW STRATEGY FOR EAST AFRICAN CRUDE OIL PIPELINE ESIA REPORT (May '19)			
15 Jan	ESIA Report Submitted to NEMA	TEAM	✓
22 Jan	Lead Agency Screening and Distribution of the hard & Soft copies to LA's	NEMA	✓
	Shared with NCEA/NEA	NEMA	✓
1Mar	Individual Evaluation by NEMA Officers	NEMA	✓
11 Mar	Receipt of comments from Lead Agencies	NEMA	(Part)
23 – 25 Apr	Joint Internal Review	NEMA	✓
13 – 18 May	Baseline Verification inspection	NEMA	
24 Jun – 6 Jul	(i) Joint Technical review of the ESIA (ii) Public Notice for invitation of comments	NEMA	
8 Jul	(i) Submission of Detailed or Updated LA's Review comments (ii) Consultation with NEMC– Tanzania	NEMA /LA's	
8 – 12 Jul	(i) Development of IEC Materials for (ii) Preliminary feedback to TEAM on the review of the ESIA (iii) Notify Lead Agency to Plan for & Organize Public Hearing	NEMA & LA	
22 – 26 Jul	Public Engagement /Disclosure •Print media, Radio and TV Adverts •Talk shows (Kampala & in the districts of Pipeline Routing)	NEMA, PAU & TEAM	
20 Sep	Deadline for Receipt of Public Comments	NEMA	
4 – 8 Nov	Public Hearing(s)	LA & NEMA	
29 Nov	Compilation and consideration of Presiding Officer's Report and Additional comments from Lead Agencies Final Consideration with NCEA/NEA Final consideration with NEMC– Tanzania	NEMA	
11 Dec	Final decision taken (EIA certificate or any other advice)	NEMA	

Annex 2: Remarks on rivers, wetlands and their crossings

There are 5 crossings of major rivers and associated wetlands (Fig. A2.3-1 at p. A2-3):

1. Kafu river at KP37
2. Nabazaki River at KP114
3. Nabazaki River at KP148
4. Katonga River at KP165
5. Kibale River at KP274

The crossing sites are characterised in the table below.

river crossing	floodplain width (m) (Table 6.4-18 and Att. A2.1)	description (based on sections 6.4.1.3 and A2.4)	sensitivity (Tables 6.4-5, 6.4-6, 6.4-10, 6.4-11)
Kafu river	500	no main channel; in the middle of a dense papyrus wetland	(very) high sensitivity (p. A2-7); the Ugandan National Policy for the Conservation and Management of Wetlands protect the Kafu R wetlands
Nabazaki River	300 (150)	undisturbed papyrus wetland; water depths more than 2 meters	high sensitivity; the Ugandan National Policy for the Conservation and Management of Wetlands protects this river and its wetland; Ugandan endangered species and IUCN near threatened: spot-necked otter
Nabazaki River 2	300 (1000)	undisturbed large papyrus wetland; an old railway splits a narrow strip of wetland from the main wetland	see above
Katonga River	200 (250)	swamp area with no visible current; water depths to 2.6 meters recorded	(very) high sensitivity; Ugandan endangered species and IUCN near threatened: spot-necked otter; IUCN vulnerable and Uganda vulnerable: hippopotamus, sitatunga, Temmincks's ground pangolin, tree pangolin, leopard
Kibale River	30 (+ 25?)	flow is low *(NCEA: during the observations?)*; one site cultivated and the other papyrus wetland	high sensitivity; the river is connected with or flows through numerous nationally protected sites, incl. the downstream Nabajjuzi wetland, which is a Ramsar site.

The sensitivity ranking of watercourses in Table 6.4-19 (p. 6-79) as 'low' seems to be unjustified when the note made at p. 6-80 is taken into account. It must be realised that a watercourse cannot be an ecological habitat without flow, so the sensitivity of a watercourse must be ranked as high on flow when it is ranked high on habitat and conservation of species (e.g. Table 6.4-5 at p. 6-37/38). To a lesser extent, this also holds for river channel morphology and stability (as considered in Table 6.4-22) and also on ecological connectivity which is not considered as a criterium. It is further striking that the ranking for surface water contamination is ranked as high for the Katonga and Kibale Rivers but moderate for the Kafu and Nabakazi Rivers (Table 6.4-25).

The impact assessment is done in section '8.3 Biodiversity: Flora and Fauna Species of Conservation Importance' (p. 8-37 and 8-38/39), where the Kibale River is not considered, which seems reasonable. The impact assessment is neither mentioned under '8.4 Bio-diversity: Legally Protected, Internationally or Nationally Recognised Areas' nor '8.2 Biodiversity: Habitats of Conservation Importance'. This is striking as the wetlands and rivers at the crossings provide ecological habitats (that are protected) and are connected to valuable nature protection areas. This holds for all main water courses incl. the Kibale River which was not considered under section 8.3.

Potential Project Impacts are further considered in section 8.6.2. The issue of physical disturbance of the rivers and their associated wetlands is poorly addressed in this section. It should be remembered that the floodplains are usually several hundreds of meters width, where river flow occurs across a large width. The risk of river contamination is considered to be not significant because of 'the negligible magnitude, transient duration and site-based/local extent of the potential impact' (p. 8-93 and 8-95). This strongly underrates the risk as 1) contamination of flowing surface water cannot be site-specific or local according to the character of a flowing river and 2) incidental contamination events may damage ecosystems for prolonged periods of time.

Under section 8.6.3 Mitigation Measures, it is written at p. 8-97 that 'location-specific method statements for open-cut water course crossings will be prepared where necessary'. This is remarked under the heading 'Generic Impact', whereas the issue should rather be explicitly addressed under the heading 'Location-specific disturbance' as the river crossings are specific sites. More importantly, the digging of a trench for river crossings is not as self-evident as stated in the ESIA.