

Strengthening Environmental Management and Reducing Pollution Risks from the Oil and Gas Sector in Uganda



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List of Abbreviations

AEWA	Agreement on the Conservation of African-Eurasian Migratory Waterbirds
AGODA	Albertine Graben Oil and Gas Districts Association
BMP	Biodiversity Management Plan
CCAC	Climate and Clean Air Coalition
CFR	Central Forest Reserve
CHARM	Chemical Hazard and Risk Management
CNA	Capacity Needs Assessment
CNOOC	China National Offshore Oil Company Uganda Limited
CoA	Certificate of Approval
CPF	Central Processing Facility
CSOs	Civil Society Organizations CSOs.
DCPs	Disaster Focused Contingency Plans
DDPM-OPM	Department of Disaster Preparedness and Management Office at the Office of the Prime Minister
DENRC	District Environment and Natural Resources Committee
DEO	District Environmental Officers
DLG	District Local Government
DNRO	District Natural Resources Officers
DRC	Democratic Republic of the Congo
DRM	Disaster Risk Management
DWRM	Directorate of Water Resources Management
EACOP	East Africa Crude Oil Pipeline
EIN	Environmental Information Network
EITI	Extractive Industries Transparency Initiative
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plans
FAO	Food and Agriculture Organization
FOST	Fast Oil Spill Team
GHG	Greenhouse Gases
GIZ	German Agency for International Cooperation
GMP	Global Methane Pledge
IOGP	International Association of Oil and Gas Producers
IPCC	Intergovernmental Panel on Climate Change
IPIECA	International Petroleum Industry Environmental Conservation Association
LPG	Liquid Petroleum Gas
MAAIF	Ministry of Agriculture, Animal Industries and Fisheries
MARPOL	International Convention for the Prevention of Pollution from Ships and Protocols 1973
MDA	Ministries, Departments and Agencies
MEMD	Ministry of Energy and Mineral Development
MFA	Ministry of Foreign Affairs
MFNP	Murchison Falls National Park
MGLSD	Ministry of Gender, Labour, and Social Development
MLG	Ministry of Local Government

MLHUD	Ministry of Lands, Housing and Urban Development
MOU	Memorandum of Understanding
MTWA	Ministry of Tourism, Wildlife and Antiquities
MWE	Ministry of Water and Environment
NBI	Nile Basin Initiative
NCA	Norwegian Coastal Administration
NDC	Nationally Determined Contributions
NDPII	Uganda Second National Development Plan
NEA	National Environment Act
NEMA	National Environment Management Authority
NFA	National Forestry Authority
NGOs	Non-governmental organizations
NINA	Norwegian Institute for Nature Research
NOC	National Oil Company
NOGP	National Oil and Gas Policy
NOPC	National Oil Pollution Committee
NOSCP	National Oil Spill Contingency Plan 2020
OfD	Oil for Development Programme (Government of Norway)
OGMP	Oil and Gas Methane Partnership
OPM	Office of The Prime Minister
OSCPs	Oil Spill Contingency Plans
OSMAG	Oil Spill Mutual Aid Group
OSPAR	Oslo Paris Commission
OSRAT	Oil Spill Response Action Team
PAU	Petroleum Authority of Uganda
PLONOR	Pose Little or No Risk to the Environment
PPE	Personal Protective Equipment
SDPR	Sustainable Development of Petroleum Resources Programme
SEA	Strategic Environmental Assessment
TEPU	Total Exploration & Production Uganda
TUOP	Tullow Uganda Operations
UBOS	Uganda Bureau of Statistics
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNOC	Uganda National Oil Company
UNRA	Uganda National Roads Authority
USAID	United States Agency for International Development's
UWA	Uganda Wildlife Authority
VOCs	Volatile Organic Compounds
WCS	World Conservation Society
WWF	World Wildlife Fund Uganda

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Foreword

United Nations Environment Programme

Regional Office for Africa



Our global community is facing an unprecedented, triple planetary crises: climate change, biodiversity loss, and pollution and waste. Given their interdependence and their collective impacts on the planet's ecosystems, our societies and economies, there is urgency to prevent, mitigate and build our resilience to these global challenges.

In 2022 UNEP initiated an update of its 2017 technical report on the Institutional Capacity Needs Assessment for Strengthening Environmental Management and Reducing Pollution Risks from the Oil and Gas Sector in Uganda. While there are high expectations in Uganda to derive multiple development gains from its oil and gas sector, including improving access to energy, there remain environmental and social risks associated with oil and gas

development. In undertaking the CNA, UNEP is supporting Uganda to develop the necessary institutional capacities to ensure that development of its oil and gas sector does not lead to pollution and uncontrolled hazardous waste, biodiversity loss and ecosystem degradation as well as emissions to air, which contribute to climate change.

The main findings of the CNA recognize the important strides Uganda institutions have taken to reduce environmental and pollution risks in its oil and gas sector. At the same time, the CNA report underscores the importance of continuing to strengthen environmental governance systems, developing the necessary technical skills, and institutional structures and mechanisms across mandated institutions – both at the national and district levels.

As Uganda moves towards oil production phase, stringent environmental due diligence and compliance monitoring will assume even greater significance, in order to safeguard the country's significant biodiversity and ecosystems located in the Albertine Graben region, which support local livelihoods and feed into the region's Great Lakes. Anticipating future needs in hazardous chemicals and waste management and water resource management, as well as acute spill prevention and contingency planning are also areas for enhanced institutional capacity development. Co-existence between development sectors, including fisheries, tourism and agriculture; safeguarding local heritage sites; as well as sustaining public and civil society engagement in decision-making processes remain key priorities. Finally, ensuring that oil and gas production does not contribute to greenhouse gas emissions, in particular methane, is also highlighted in the CNA report.

UNEP encourages the Government of Uganda to anchor oil and gas development firmly within its broader national commitments to fight climate change, biodiversity loss and pollution. We hope Uganda will be able to harness the opportunities gained from its hydrocarbon resources, working towards net zero development and enhance the use of renewables in its energy mix for a sustainable and just transition.

Dr. Rose Mwebaza

Director and Regional Representative
United Nations Environment Programme

Government of Uganda Ministry of Energy and Mineral Development



Improving access to energy and diversifying the energy mix are a top development priority for the country. Uganda is witnessing a surge in oil and gas development following initial exploration discoveries in 2006. Currently, recoverable oil reserves are estimated at 1.4 billion barrels, and production is expected to commence in 2025/26. The progress towards the production phase of oil and gas resources presents great socio-economic opportunities and benefits which is envisaged to drive Uganda to achieve its Vision 2040 by transforming from a peasant economy to middle income status. The ecological and biodiversity significance of the areas where oil and gas resource areas are located present a challenge and a need for sustainable exploitation and production. In line with the National Oil and Gas Policy (2008), oil and gas activities must be undertaken in a manner that conserves the environment and biodiversity and spurs socio-economic development.

In 2013, Uganda with the support of the Norwegian Government under the Oil for Development Programme conducted a Strategic Environment Assessment (SEA) to assess the impact of the oil and gas activities in the Albertine graben and made recommendations to systematically address environmental management issues pertaining to the sustainable development of oil and gas activities. To date, the Government of Uganda has implemented a number of recommendations, however there is need to implement all the recommendations and take into consideration new and emerging issues.

In 2017, UNEP undertook an institutional capacity needs assessment (CNA) to evaluate the extent of the implementation of the SEA recommendations by evaluating environmental governance and management within the oil and gas sector. In 2022 UNEP initiated another Capacity Needs Assessment to review and update the current capacity development priorities related to environmental management in the present context of oil and gas development and other emerging priorities in Uganda.

The Updated Capacity Needs Assessment for Uganda 'Strengthening Environment Management and Reducing Pollution Risks from the oil and gas sector' will enhance the good practices so far attained in delivering the oil and gas projects. This updated report aims to support the Government of Uganda in assessing and prioritizing its environmental capacity challenges by providing a strategic roadmap for addressing institutional capacity development to both reduce pollutions risks and strengthen environmental governance and management in Uganda's oil and gas sector. The update was carried out from 2022-2023 and included meetings, in-country fact-finding consultations and a field visit to the Albertine Graben, surveys and questionnaires and a national validation workshop in November, 2023.

The CNA Report focuses on **four main thematic areas** identified and prioritized through multi-stakeholder consultations. The thematic areas deal with: (i) emissions and discharges, including produced water management, water use and wastewater discharges, hazardous chemicals and waste management, (ii) acute pollution risks, including oil spill management and transboundary response mechanisms, (iii) potential impacts on biodiversity from oil and gas activities in environmentally sensitive and protected areas, including impacts on biodiversity and tourism, and (iv) capacity of District Local Governments to implement their mandates on environmental governance. The report presents eleven (11) key findings and 39 recommendations in total.

The CNA was intended to assess progress against implementation of the recommendations of the 2013 SEA, as well as provide a strategic understanding of the environmental management capacities in respective Government institutions who would be engaged in oil and gas development activities. The study enhances the good practices so far attained in delivering the oil and gas projects.

The Ministry of Energy and Mineral Development would like to thank the UN Environment Programme and the Norwegian Government for their financial and technical support. Our sincere thanks to all the institutions and individuals that participated in the update and preparation of this CNA. We call upon all the various stakeholders to implement the recommendations in the CNA as per their mandates in order to ensure the sustainable exploration and production of oil and gas resources.



Eng. Irene Batebe
Permanent Secretary

Government of Norway Embassy of Norway in Uganda



It is with great pleasure and a sense of shared commitment to environmental sustainability that we, the Norwegian Embassy in Uganda, present this foreword for the report titled “*Strengthening Environmental Management and Reducing Pollution Risks from the Oil and Gas Sector in Uganda*,” prepared by the United Nations Environment Programme (UNEP) in collaboration with the Government of Norway and the Government of Uganda. This collaborative effort underscores our dedication to supporting Uganda in its pursuit of responsible and sustainable development.

Uganda’s significant strides in oil and gas development, coupled with its priority to enhance energy access, requires a comprehensive approach that aligns economic prosperity with environmental conservation. This report, an update to the 2017 institutional capacity needs assessment, offers a strategic roadmap for addressing environmental challenges in the oil and gas sector, integrating the insights of 118 stakeholders from various sectors.

The findings reveal both commendable progress and critical gaps across four thematic areas: emissions and discharges, acute pollution risks, biodiversity impacts, and district-level environmental governance. The 11 key findings and 42 recommendations, meticulously outlined in this report, provide a nuanced understanding of Uganda’s current state and a roadmap for future actions.

The report underscores the need for strengthened institutional coordination, earmarked funding for environmental governance, and enhanced waste management practices. These recommendations align with our shared vision for a resilient and environmentally responsible oil and gas sector.

Additionally, the report highlights the imperative to address methane emissions, strengthen oil spill preparedness, and enhance biodiversity monitoring. The call for continuous public outreach and awareness reflects the commitment to transparency and inclusivity in the oil and gas sector’s development.

We commend UNEP for their comprehensive assessment and the Government of Uganda for its collaboration. The Embassy of Norway in Uganda stands committed to supporting the implementation of these recommendations, leveraging our ongoing partnerships for the benefit of Uganda’s sustainable future.

This report serves as a valuable resource for policymakers, industry stakeholders, development partners and the public, providing a roadmap for a balanced and sustainable future for Uganda. Together, let us work towards ensuring that the oil and gas sector becomes a catalyst for positive change, contributing to Uganda’s development while safeguarding its precious environment.

A handwritten signature in blue ink, appearing to read 'AKH', written in a cursive style.

H.E. Ambassador Anne Kristin Hermansen

Embassy of Norway in Uganda
Government of Norway

01

Executive Summary

Improving access to energy and diversifying energy supply are a top development priority for Uganda. Biomass is currently the most important source of energy for most of the population, comprising about 89% of total primary energy consumption.

Uganda is witnessing a surge in oil and gas development following initial exploration discoveries in 2006. Currently, recoverable oil reserves are estimated at 1.4 billion barrels, and production is expected to commence in 2025 from the Kingfisher and Tilenga Projects located in the Albertine Graben region, also home to seven national parks and three wildlife reserves. As the petroleum sector moves into the development phase, and with oil production expected in 2025, more than ever, national priorities to improve the energy sector will also need to weigh in the country's climate, biodiversity, and sustainable development goals.

In this context, the United Nations Environment Programme (UNEP) and the Government of Norway are collaborating with the Government of Uganda to enhance its institutional capacities for improved environmental governance and for reducing environmental and pollution risks in the upstream oil and gas sector.

Objective and Scope

In 2017, UNEP undertook an institutional capacity needs assessment (CNA) to evaluate environmental governance and management within the oil and gas sector in Uganda and developed a draft CNA report. An update to this report was initiated in 2022 to review the current capacity development priorities related to environmental management in the present context of oil and gas development and other emerging priorities in Uganda.

Oil production is expected to commence in 2025 from the Kingfisher and Tilenga Projects located in the Albertine Graben region

In this report, UNEP revisits, reviews, and updates the findings of the 2017 draft report. This updated report aims to support the Government of Uganda in assessing and prioritizing its environmental capacity challenges by providing a strategic roadmap for addressing institutional capacity development to both reduce pollutions risks and strengthen environmental governance and management in Uganda's oil and gas sector. The update was carried out from 2022-2023 and included virtual meetings, two in-country fact-finding consultations and a field visit to the Albertine Graben region, follow-up surveys and questionnaires, and a national validation workshop.

This report focuses on four main thematic areas that were identified and prioritized through multistakeholder consultations:

1. Emissions and discharges: related to air emissions, produced water management, water use and wastewater discharges, hazardous chemicals, and waste management.
2. Acute pollution risks: related to oil spill management and transboundary response mechanisms.
3. Potential impacts on biodiversity from oil and gas activities in environmentally sensitive and protected areas: related to impacts on biodiversity and tourism.
4. Capacity of district local government functionaries to implement their mandates on environmental governance.

In total, 118 individuals across multiple stakeholder groups were consulted – 57 from national government institutions, 5 from district local governments, 16 from CSOs, 6 from academia, 6 from the private sector, 5 from other UN agencies based in Uganda, 6 from international developmental partners based in Uganda, and 17 from other international development partners. Of the 118, 41 were women and 77 men.

Key Findings and Recommendations

The key findings of the report address issues and emerging concerns under the four thematic areas which were identified during the assessment process. In total, there are 11 main key findings, and 42 recommendations.

KEY FINDING 1:

Most of the key framework laws and regulations of Uganda have been enacted and adopted, with some exceptions.

Uganda has a well-developed set of primary laws and regulations that are necessary to implement strong environmental governance and management in the oil and gas sector.¹

Several of the existing instruments are also undergoing reviews to incorporate changes introduced by later enactments. However, a few legal critical instruments are still missing – primary instruments such as a national regulation on air emissions, chemicals management, and national air quality standards; and secondary instruments such as regulations on decommissioning, produced water disposal, and guidelines on impact assessment on cultural sites.

Uganda is also party to several key multilateral treaties and agreements, with a few notable exceptions - International Convention for the Prevention of Pollution from Ships (MARPOL) and Protocols 1973/1978, International Convention on Oil Pollution Preparedness, Response and Co-operation 1990, London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (revised 1996) and its Protocol, and International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004.

Way Forward:

Primary legal and regulatory instruments should be finalized and adopted at the earliest. Secondary instruments should be developed to further bolster the regulatory standards. Furthermore, a robust and distinct permitting regime for gas flaring and venting needs to be developed. To encourage monitoring and compliance, specific rules around measuring, reporting, and verification of greenhouse gas emissions, in particular methane emissions, due to petroleum activities are required. Ongoing reviews and updates of existing policies must ensure greater alignment between Uganda's energy, climate and environmental policies, and address how the oil and gas sector contribute towards Uganda's overall energy transition strategies.

To support its efforts on oil spill and acute pollution response, Uganda may also consider joining key multilateral agreements such as the International Convention for the Prevention of Pollution from Ships (MARPOL) and Protocols 1973/1978 with annexes, the International Convention on Oil Pollution Preparedness, Response and Co-operation 1990, the London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (revised 1996), the Protocol to the London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (revised 1996), and the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004.

¹ These include National Environment Act 2019, National Petroleum (Exploration and Production) Act 2013, National Environment (Waste Management) Regulations 2020, Petroleum (Waste Management) Regulations 2019, National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020, and the National Climate Change Act 2021.

KEY FINDING 2:

The institutional architecture for environmental governance in the oil and gas sector in Uganda is in place- but requires earmarked funding to enable coordination between Ministries, Departments and Agencies (MDAs).

The key MDAs engaged with environmental governance and management of the oil and gas sector have clear mandates but need stronger coordination amongst them. There are two main institutional coordination mechanisms in place: the Multi-Institutional Technical Implementation Committee established under the 2013 Strategic Environment Assessment (SEA) and coordinated by the Ministry of Energy and Minerals Development (MEMD), and the Multi-Sectoral Environmental Monitoring Committee for Oil and Gas established under the Albertine Graben Environment Monitoring Plan (AGEMP) 2015 and coordinated by the National Environmental Management Authority (NEMA). However, neither of these coordinating mechanisms have been fully functional due to lack of adequate and sustained budgeting. The existing coordination mechanisms have not been provided with dedicated budgets resulting in irregular activity.

Way forward:

A functional, national coordination mechanism between relevant MDAs, with a designated funding source, is essential, especially as the demand for stronger environmental compliance and monitoring increases with the start of oil and gas production. Several existing mechanisms, such as the Multi-Institutional SEA Technical Implementation Committee and the Multi-Sectoral Environmental Monitoring Committee for Oil and Gas need to be adequately funded by the lead institutions (i.e., MEMD or NEMA) to facilitate coordination, for instance to avoid duplication of efforts and support joint monitoring inspections whenever possible, as well as for ensuring policy coherence in addressing emerging issues.

KEY FINDING 3:

Waste management infrastructure in Uganda has improved since 2017 but monitoring of capacity needs is important, especially as new fields are developed.

National Petroleum Waste Management Regulations 2019 introduced comprehensive waste tracking and documentation procedures, including waste manifests, and mandates segregation and documentation of petroleum waste. Inspections, transport tracking, and compliance checks are conducted as part of regular monitoring through site visits and inspections by the PAU and NEMA. Uganda has four designated waste management facilities for petroleum waste, including EnviroServ, Luwero Industries, and White Nile Consultants.

However, Uganda lacks specific regulations for managing hazardous chemicals; in their absence, licensees are required under their respective Conditions of Authorization (CoA) to maintain up-to-date chemical records and adhere to international standards. Effective waste management during field development and production phases, especially hazardous waste, should remain a vital component of environmental oversight in the sector.

Currently there is little to no proper treatment of wastes from municipalities and villages in the oil districts. Additional support for waste collection and proper treatment should also be considered, as the influx of people into the oil districts has already stressed existing services provided by the districts.

Way Forward:

While there have been significant improvements related to waste management since 2017, in moving forward, it will be critical to ensure that NEMA and PAU have clear and systematic waste management oversight systems in place to undertake review and triangulation of all monitoring reports on waste streams generated, transported, and treated for disposal. Ensuring regular Government audits focused on hazardous chemicals and waste management and the necessary budgets allocation to support regulatory activities and site inspections by NEMA and PAU will remain critical. There is also need to have continuous review of expected waste types and volumes as Uganda moves into production stage, to ensure that there is sufficient capacity to handle hazardous waste in current waste treatment facilities. Uganda should also expedite the development and implementation of national regulations for hazardous chemicals management, establishing clear guidelines for classification, handling, and disposal. District Governments in oil districts will also need to increase investments in their municipal waste landfill sites, in response to substantial influx of new residents.

KEY FINDING 4:

Anticipating future water demands and produced water disposal is needed for sustainable water resource management.

All wastewater discharge is subject to National Environment (Standards for Discharge of Effluent into Water and Land) Regulations 2020, with environmental inspectors having the authority to monitor and collect samples. Water requirements for the Tilenga Development and Kingfisher projects are sourced from either groundwater sources and/or from Lake Albert. While specific regulations for produced water disposal are lacking, operators are obligated to treat and reinject produced water into underground formations to prevent the contamination of usable aquifers and surface water. The CoA explicitly prohibits the discharge of produced water and hydrotest water into the environment and mandates compliance with the conditions of the water abstraction permit.

Way Forward:

In addition to establishment of national guidelines or regulations on produced water disposal, MWE should maintain strong oversight and compliance of water abstraction permits to avoid unauthorized abstraction. Furthermore, projections for water abstraction requirements in the sector should be reviewed continuously, especially as petroleum activities intensify, given their implications on other water users. Such projections should consider all aspects of water resource management, including other potentially competing domestic or sectoral water demands (driven in part by growing population in the oil districts), as well as transboundary considerations with neighbouring countries within the Nile Basin. District governments and local communities should also be involved in discussions related to water needs and water abstraction requirements of the oil and gas sector.

KEY FINDING 5:

Oil and gas production can occur with near-zero methane emissions with adequate design and mitigating measures taken from the start. Regulating and monitoring GHG emissions should be prioritized, especially in the production phase.

Uganda does not have a comprehensive greenhouse gas (GHG) inventory for the oil and gas sector, hindering the establishment of clear mitigation targets and monitoring of emissions. The revised 2022 Nationally Determined Contribution (NDC) of Uganda does not account for GHG from the oil and gas sector. There is also no established permitting regime for gas flaring and venting. Capacity strengthening is needed at PAU and NEMA for effective measurement and calculation of GHG emissions.

Way Forward:

Taking a proactive approach to GHG emissions reduction, particularly methane, from the outset of oil and gas production is more cost-effective and feasible. Uganda should capitalize on the potential for near-zero methane emissions. The petroleum sector should implement rigorous emissions control measures, such as monthly or quarterly leak detection and repair (LDAR) inspections, and the prohibition of venting-by-design equipment. Training and awareness raising are essential for the MDA personnel in the GHG inventory teams on GHG/methane emissions measuring, monitoring, and reporting from the oil sector.

Uganda should promote operator participation in the Oil and Gas Methane Partnership (OGMP) 2.0 to enhance methane emission monitoring and reporting and consider joining the Global Methane Pledge (GMP), leveraging the expertise of UNEP's International Methane Emissions Observatory (IMEO) and technical resources from OGMP 2.0. The recently initiated IMEO baseline study to measure methane emissions before and after the start of oil and gas production can be used both in the next update to Uganda's NDCs and in the development of district level climate change action plans mandated under the NEA 2019.

KEY FINDING 6:

Oil spill and emergency response preparedness need to be strengthened and include transboundary considerations.

Uganda has established key legal instruments governing oil spill response, including the National Environment Act 2019 (NEA 2019) and the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations 2020, and the National Oil Spill Contingency Plan 2020 (NOSCP) itself. There is, however, need for more training and exercises to implement the NOSCP and develop equipment stockpiles for Tier 2 spill scenarios. Oil spill modelling in the Albertine Graben requires a detailed tactical preparedness and response plan, that considers environmental sensitivities. However, oil spill scenarios and contingency planning should work towards country-wide coverage and not only focus on the Albertine Graben. Most districts are yet to integrate oil spill preparedness into their localized disaster response plans. Uganda also lacks specialized bilateral agreements on transboundary oil spill response.

Way Forward:

It is critical that the NOSCP 2020 is exercised regularly by all relevant stakeholders in Government, industry, and local communities, based on different spill scenarios including Tiers 1 to 3. Field operator's spill response plans and equipment resources must be tested by NEMA and PAU using desktop and field deployment exercises, including both on-water and on-land scenarios. MDAs and industry can co-sponsor spill response exercises, including desk-top and field exercises, while also coordinating with local and national disaster

management authorities in oil spill exercises. To support efforts in pooling resources for oil spill response, Uganda may consider establishing public-private partnerships, such as the Oil Spill Mutual Aid Group (OSMAG) Society in Kenya, which could address equipment needs and response capacity shortfalls. Ongoing efforts to develop or update area-wide environmental sensitivity maps should be undertaken to inform oil spill preparedness and response, following IMO good practice guidelines on sensitivity mapping for oil spill contingency planning.

Uganda should initiate transboundary cooperation and work towards establishing formal transboundary agreements with neighbouring countries (e.g., DRC and United Republic of Tanzania) for oil spill preparedness and response, addressing communication pathways, equipment availability, and joint research.

KEY FINDING 7:

Continuous monitoring of the impact of oil and gas activities on biodiversity and co-existence with tourism activities is more critical than ever in the development and production phase.

Uganda has undertaken several measures to minimize long and short-term negative impacts of oil and gas activities on biodiversity and on tourism, including the development of specific sensitivity atlases for protected areas. Unfortunately, the required level of government monitoring has suffered setbacks because of insufficient personnel and training, and a lack of equipment and resources to enable field monitoring activities, including at the Uganda Wildlife Authority (UWA). UWA is mandated to carry out wildlife conservation and management in protected areas such as national parks and wildlife reserves, as well as in wildlife sanctuaries. There is continued need for awareness raising and education of oil field workers and wildlife and forest rangers on the ecological sensitivity of the ongoing project sites as well as for any new exploration that may affect other protected areas or biodiversity hotspots. Tourism in the Albertine Graben region, which is a major economic driver in Uganda, is taking place alongside petroleum activities, thus underscoring the importance of environmental compliance monitoring in protected areas and continuous monitoring of impacts on tourism.

The required level of government monitoring has suffered setbacks because of insufficient personnel and training, and a lack of equipment and resources to enable field monitoring activities, including at the Uganda Wildlife Authority

Way Forward:

As the primary authority overseeing activities within wildlife conservation areas, such as national parks, wildlife reserves, wildlife sanctuaries and community wildlife areas, UWA's critically needs staffing, financial and technical support to carry out its responsibilities. Biodiversity management plans developed by operators to reduce oil and gas impact on other development sectors, especially on tourism, and their subsequent monitoring require more focused attention. Any new exploration or production activities in other wildlife protected areas/biodiversity hotspots will require a corresponding increase in the overall capacities of the regulatory agencies to ensure a high standard of environmental compliance monitoring. As per international best practice, biodiversity offsetting should only be considered as a last resort, and in cases of residual impacts, it is advisable to avoid planned activities altogether, particularly in highly sensitive habitats. Offsets may lead to a net gain in nature elsewhere but do not necessarily account for on-site impacts on local communities and address site-level environmental and social concerns.

MTWA will need to ensure continuous data monitoring of tourism flows in protected areas where petroleum activities are taking place, including regular consultations with local tourism operators on current and emerging issues of concern. Ongoing studies on oil and gas impacts on tourism should be coordinated and effectively channeled to inform policy and regulatory measures. These measures may be applicable to all conservation areas which are open for both tourism and development activities.

KEY FINDING 8:

Inadequate institutional capacity in both national and district government institutions to implement environmental oversight of oil and gas activities.

Both national and district government institutions face substantial challenges in their institutional capacities to oversee the environmental aspects of Uganda's oil and gas activities. Institutional capacities, especially for compliance monitoring, are found to be insufficient to keep pace with Uganda's evolving oil and gas developments. Shortage of human resources within MDAs, inadequate technical expertise among ministries and district functionaries, and a lack of basic, essential monitoring equipment collectively hinder their capacity to exercise environmental oversight in the sector.

Targeted capacity support at the district level will further strengthen oversight and environmental management in the oil and gas sector

Way Forward:

Critical staff vacancies at the MDAs and districts related to environmental oversight need to be filled. The development of a long-term capacity development strategy, collaboration with universities, and the introduction of relevant courses, with gender mainstreaming objectives, are essential for addressing the technical skills gap at MDAs. Collaboration with project operators for on-the-job training, basic equipment provision (such as GPS, PPEs, vehicles, and field allowances), and the establishment of a designated national laboratory to enhance chemical analytical capabilities all work to support national monitoring and compliance efforts. Additionally, targeted capacity support at the district level, in terms of additional human resources, equipment provision, and specialized training, along with securing additional funds from the National Government, will further strengthen oversight and environmental management in the oil and gas sector.

KEY FINDING 9:

Data management for environmental governance related to oil and gas issues needs to be strengthened.

The availability, storage, and efficient retrieval of environmental data, resulting from ESIA's, CoAs, and industry required field studies are important for exercising effective Government environmental oversight. NEMA, in collaboration with the Norwegian Environment Agency, is developing an Environment Information Network (EIN) to standardize environmental data and serve as the central repository for all environmental information. PAU too has its own Environmental Management System (EMS) for monitoring oil and gas activities. Nevertheless, most MDAs continue to store environmental data in hard copies, spreadsheets, or internal databases, lacking integration of data formats across institutions. There is also the issue with the accessibility of environmental data held by oil companies.

Way forward:

Institutional coordination and collaboration on existing environmental databases and data management systems are critical to avoid duplication of effort and for cost savings. Harmonization of data and databases can be achieved through the multi-institutional data management systems such as the EIN and the AGEMP committees. A web interface, such as EIN, may also be set-up and opened to all relevant MDAs that directs users to the available environmental data hosted within existing databases and provides shared data access among MDAs.

KEY FINDING 10:

Public outreach and awareness raising should be continued to foster public dialogue, information exchange, and accountability.

As the oil and gas sector is poised to expand in Uganda, it is important to streamline communication between key stakeholders, namely national institutions, operators, local government, and civil society. Inadequate communication or inaccessible information has at times resulted in poor public confidence on environmental transparency and accountability in the sector. Significantly, Uganda joined the Extractive Industries Transparency Initiative (EITI) in 2020 led by the Ministry of Finance Planning and Economic Development with a commitment to increase overall transparency in the extractives sector.

Way forward:

Communications between operators, MDAs and districts can all be improved. The existing communication strategy should address concerns relating to greater public dialogue. The Uganda EITI initiative is a positive step in this direction. Subject to legally recognised differentiated data access rights, ESIA documents, including management plans, CoA requirements and other related documents, as well as field and other compliance monitoring reports, should be made accessible internally and externally on a centralized Government website. A clear communication pathway should be established between PAU/MEMD to MDAs, local government and local communities and build synergies with academia and research organizations and industry to encourage greater public dialogue and to combat misperceptions brought about by poor or miscommunication. Regular means of information exchanges need to be defined, including hosting of public meetings, use of social media, and posting of reports and project updates. A public outreach schedule should be developed by oil operators and widely circulated.

FINDING 11:

New and increased multi-sectoral development activities and subsequent potential direct and cumulative impacts indicates need for a fresh or updated strategic environmental assessment for all affected districts.



Government MDAs will need to review current and potentially emerging social and environmental impacts, including cumulative impacts from the various development sectors operating in the same geographic space over and above the oil and gas sector

A vast majority of the 2013 recommendations have been implemented in Uganda, with a few notable exceptions. The key objectives of the 2013 SEA remain relevant; however, in the face of new sector developments in Uganda, including new licensing blocks and development of the East Africa Crude Oil Pipeline (EACOP), Government MDAs will need to review current and potentially emerging social and environmental impacts, including cumulative impacts from the various development sectors operating in the same geographic space over and above the oil and gas sector.

Way forward: An update to the 2013 SEA is recommended with an expanded scope to address remaining and emerging challenges in the Albertine Graben region, including the need for a cumulative impact assessment across development sectors active in the area. An updated SEA process would take into account the following: (i) new oil and gas sector developments, (ii) meeting Uganda's climate change and biodiversity commitments, as well as energy and transition policy goals, (iii) transboundary cooperation, (iv) increased human influx into the oil and gas districts, and (v) socio-economic issues associated with multi-sectoral developments, including gender-differentiated and cultural heritage impacts.



UNEP Foundation Course on Oil and Gas Exploration and Production and Strengthening Environmental Management June 2017.
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02

Introduction

The United Nations Environment Programme (UNEP) has a global collaboration with the Government of Norway, under its Oil for Development Programme (OfD), to enhance national capacities for improved environmental governance and reduced pollution risks associated with the oil and gas sector. Based on this collaboration, UNEP provides capacity building support and technical assistance to Governments institutions and regulators (at national and sub-national levels) in countries supported by the OfD Programme, including Uganda.

In 2013, the Government of Uganda commissioned a Strategic Environmental Assessment (SEA) of oil and gas activities in the Albertine Graben (also known as the Lake Albert Basin), located in the western part of Uganda (MEMD 2013).

The SEA was jointly undertaken by the Ministry of Energy and Mineral Development (MEMD) and Ministry of Water and Environment (MWE). The purpose of the SEA was to undertake a holistic review of the physical environment, cultural heritage, as well as socio-economic issues that may arise because of current and future petroleum activities in the Albertine Graben and inform Government decisions in the petroleum sector. The SEA analysed the main challenges and called for recommendations to be integrated into national development planning. Many of the issues identified were cross-cutting and their implementation required concerted action from all the relevant Government Ministries, Departments and Agencies (MDAs).

In 2017, UNEP, in collaboration with Government of Uganda and support from the Government of Norway's OfD Programme carried out an institutional capacity needs assessment (CNA) on environmental management in Uganda's oil and gas sector. The 2017 CNA was intended to assess implementation of the recommendations of the 2013 SEA, as well as provide a strategic understanding of the environmental management capacities in respective Government institutions which would be engaged in oil and gas development activities. A final draft of the CNA was shared with Government stakeholders for review and comments in November 2017.

In the final phase of the OfD country programme in Uganda, UNEP proposed to revisit the key findings and recommendations of the 2017 CNA report and support an updated review of the current capacity development priorities related to environmental management, considering the present context of oil and gas development and other emerging priorities in Uganda. The purpose of finalizing the CNA report is to support the Government of Uganda in prioritizing capacity challenges and provide a strategic document or "roadmap" for institutional capacity development to strengthen environmental governance, particularly as Uganda moves towards oil production.

03

CNA Methodology and Analytical Framework

Discussions on the CNA update was initiated in May 2022, with the assessment being undertaken from January to September 2023. UNEP conducted the CNA update in the following phases:

1. Virtual consultations to identify latest priorities for capacity needs.

In 2022, UNEP initiated an update of the 2017 draft CNA report. A national kick-off meeting was held online with the SEA Technical Implementation Committee on 27 May 2022. A follow up online questionnaire survey was undertaken, and two additional online stakeholder consultation meetings were held, including one dedicated session with civil society organizations (CSOs). Based on these initial online consultations, UNEP's initial conclusions were that the 2017 CNA findings and recommendations continue to be relevant in 2022. Nevertheless, significant new infrastructure developments are taking place in oil fields in the Albertine Graben region, which called for further assessment in light of potential new risks and concerns. The SEA Technical Implementation Committee members also requested UNEP to undertake in-person consultations, due to bandwidth/connectivity constraints in the country.

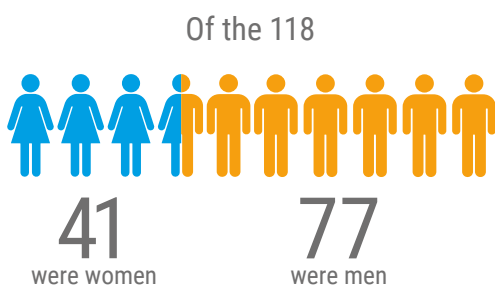
2. Scoping mission to finalize thematic focus areas for the update process.

UNEP organized a planning mission to Kampala, Uganda, from 18 to 20 January 2023 to discuss the scope and implementation plan for finalizing the CNA Report. A core CNA technical working group was constituted, comprised of focal points from MEMD, MWE, National Environment Management Authority (NEMA), Petroleum Authority of Uganda (PAU) and Uganda Wildlife Authority (UWA).

Subsequently, four thematic areas of focus vis-à-vis the environment and oil and gas sector were identified for the CNA update:

- i. Emissions and discharges,
- ii. Acute pollution risks,
- iii. Potential impacts on biodiversity in environmentally sensitive and protected areas, and
- iv. Current mandates and roles of district environmental officers related to oil exploration and production.

Annex A describes the analytical framework used in the update of the CNA.



3. Data gathering and multi-stakeholder consultations.

Subsequently, a follow-up fact-finding mission was undertaken from 20 March to 01 April 2023 to conduct focused group consultations with government institutions, academia, civil society organizations, and other key stakeholders. UNEP also carried out field visits in the Jobi-Rii lease area. UNEP was accompanied by technical representatives from MEMD, MWE, NEMA, PAU and UWA.

Following in-country missions, further consultations were held virtually through bilateral meetings and follow-up surveys.² Compilation of documents from respective MDAs and desk reviews were also undertaken by UNEP. Stakeholders who participated during this phase are listed in Annex G.

In total, 118 individuals across multiple stakeholder groups were consulted – 57 from national government institutions, 5 from district local governments, 16 from CSOs, 6 from academia, 6 from the private sector, 5 from other UN agencies based in Uganda, 6 from international developmental partners based in Uganda, and 17 from other international development partners. Of the 118, 41 were women and 77 men.

4. Report drafting

An initial draft report was submitted for comments to the core CNA technical working group (MEMD, MWE, NEMA, PAU and UWA) in August and in September 2023. A full draft report was subsequently shared with all stakeholders in October 2023 for comments.

5. Validation and finalization of the report

The final draft report was prepared upon incorporation of inputs received and was disseminated in early November 2023 to be presented at a National Validation Workshop.

Due to time constraints for the assessment, UNEP together with the core CNA technical working group decided not to include new licensing blocks nor the planned East Africa Crude Oil Pipeline (EACOP)³ and the crude oil refinery in Hoima, with focus primarily on ongoing activities in the Albertine Graben (Biryabarema 2023; PAU 2023a). However, based on the consultations, UNEP agreed to raise any potential or emerging concerns in relation to future developments. Similarly, the broader social development dimensions associated with the emerging oil and gas sector in Uganda, including considerations with regards socio-economic opportunities for women across the sector and associated sectors, as well as gender-differentiated vulnerabilities linked to the sector have not been fully assessed in this report. However, some of these gender related issues have been flagged under the Key Findings and Recommendations section. Annex B provides further details on the methodology adopted, scope of the assessment, and its limitations.

² Follow-up survey responses were received only from MWT, PAU, UWA, MAAIF, DNRO Buliisa and DNRO Nwoya. **No responses** were received from MLHUD, OPM, MGLSD, MEMD, MWE, NFA, UNRA, MTWA, NEMA and DNRO Hoima.

³ A 24-inch oil export pipeline stretching 1445 km, starting at Kabaale Industrial Park, Uganda and terminating in Chongoleani at the Indian Ocean Port of Tanga in Tanzania (EACOP 2023a).

04

The Oil and Gas Sector in Uganda

Uganda is situated on the equator and bordered by Kenya, South Sudan, the Democratic Republic of the Congo (DRC), Rwanda, and United Republic of Tanzania (Tanzania). The country covers an area of approximately 241,551 square kilometres and exhibits a wide range of topographical features, including mountains, plateaus, lakes, rivers, and forests (Uganda National Web Portal 2023).



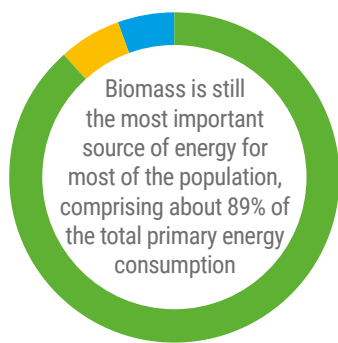
Murchison Falls National Park, Uganda 2023.
© UNEP/Erich Gundlach



Improving access to energy and diversifying energy supply are a top development priority for the country

Uganda is renowned for its exceptional biodiversity, boasting a vast array of plant and animal species. The country is home to numerous national parks and protected areas, such as Bwindi Impenetrable National Park, Queen Elizabeth National Park, and Kidepo Valley National Park. Mostly located in the Albertine Graben region area, these conservation areas harbour a diverse range of wildlife, including elephants, lions, giraffes, hippos, chimpanzees, and a significant population of mountain gorillas.

Improving access to energy and diversifying energy supply are a top development priority for the country, given that in 2019, Uganda still ranked 7th in the Top 20 access-deficit countries with 26 million people without access to electricity (IEA 2023). Moreover, biomass is still the most important source of energy for most of the population, comprising about 89% of the total primary energy consumption, which can be separated into firewood (78.6%), charcoal



■ Firewood ■ Charcoal ■ Crop residues

(5.6%) and crop residues (4.7%) (Enach 2023). While Uganda has made important progress in electrification from 2010-2019, less than 5% of its population had access to clean cooking in 2020. In this regard, the discovery of commercially viable oil and gas reserves in the Albertine Graben region presents an important shift in Uganda's energy sector and development priorities.

Oil and gas exploration has been underway in Uganda since the beginning of the last century, but firm discoveries were only made in 2000s. Current recoverable oil reserves are estimated at about 1.4 billion barrels, and production is expected to commence in 2025. Uganda has made 21 oil and gas discoveries, with 14 fields under different stages of development (Nyombi 2022).

As per PAU's 2023 estimates, Uganda's oil and gas investments are substantial at US\$ 8 billion related to new exploration wells, and construction of central processing facilities, pipelines, water extraction stations, access roads and camps (PAU 2023b). Later development includes the Uganda crude oil refinery at Kabaale in Hoima, the EACOP, and various supporting infrastructure projects having a total cost of approximately US\$ 8.5 billion.

Albertine Graben is the principal prospective area for petroleum exploitation (see **Figure 1**). 40% of Albertine Graben has been explored and less than 15% is licensed (Uganda EITI 2023). Twenty percent (20%) of the overall area of the Albertine Graben are deemed to be protected areas (NEMA 2009). Uganda has five other sedimentary basins that are also of interest for development. Various leads and prospects have been identified in the Albertine Graben, and other sedimentary basins in the country are under investigation.

40% of Albertine Graben has been explored and less than 15% is licensed

The water resources in the Albertine Graben have a trans-boundary character. The waters of both Lake Albert and Lake Edward further to the south are shared between Uganda and the DRC. The river Semiliki partially forms the border between the DRC and Uganda between the two lakes. The watershed of the Nile River exiting Lake Albert to the north encompasses area in Uganda, DRC, Burundi, Rwanda, United Republic of Tanzania, Kenya, South Sudan, Sudan, Egypt, Ethiopia, and Eritrea (MWE 2022).

Two oil field projects are in the active stages of development: Tilenga and Kingfisher. Parts of the petroleum exploration and development areas for the Tilenga Project are located within several Government-designated protected areas, most notably the Murchison Falls National Park (MFNP) as well as wildlife reserves and central forest reserves (see **Figure 2**). The Kingfisher field is offshore, below the lakebed of Lake Albert, but is accessed from directional well drilling pads located along the shoreline.

Production licenses have been issued to China National Offshore Oil Corporation Uganda Limited (CNOOC) for the Kingfisher Development Project and to TotalEnergies Exploration & Production Uganda B.V. for the Tilenga Development Project (Uganda Radio Network 2013). The production licenses for these fields are for a duration of 25 years, each with the provision of extension for five more years at the end of the license period. Exploration licenses have also been issued for six other areas in the Albertine Graben (PAU 2023c).

In January 2023, drilling for field development commenced in the Kingfisher field (Uganda NOC 2023), while at Tilenga drilling for development started in June 2023 (PAU 2023d). Production from both areas is expected to begin in 2025 upon completion of the supporting infrastructure and export pipeline (Saba 2023).

Figure 1: The status of licensing in the Albertine Graben Region in Uganda

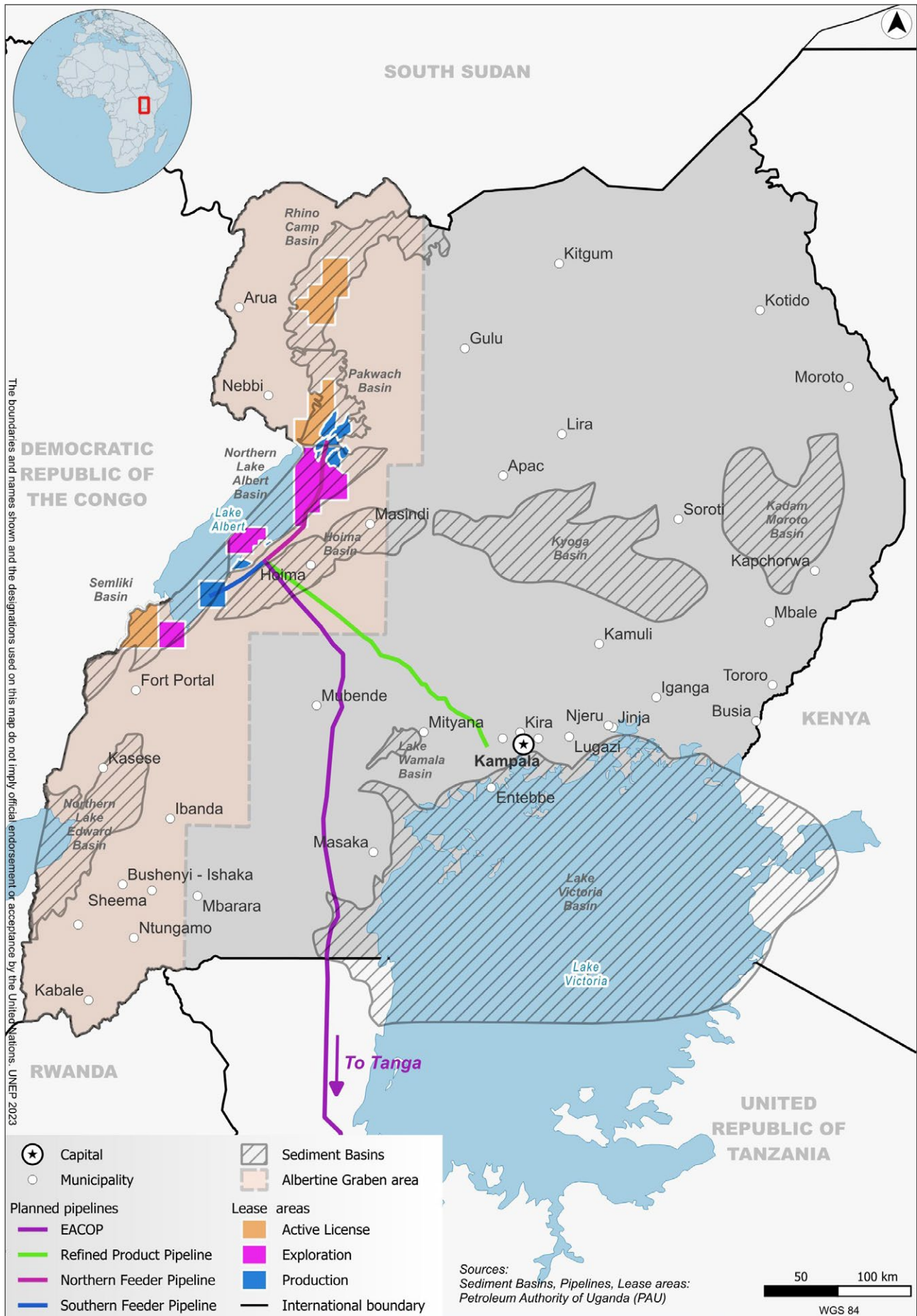
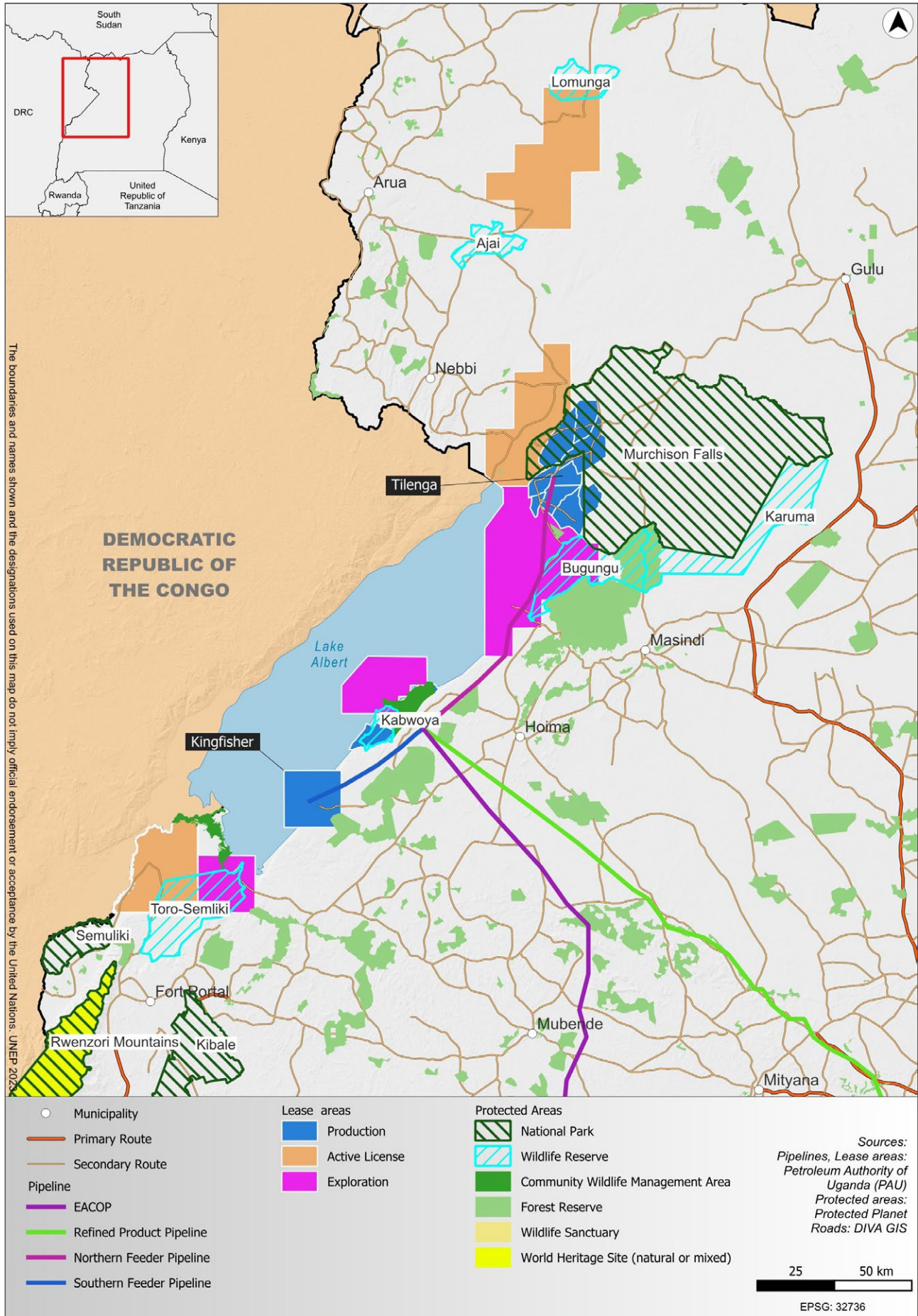


Figure 2: Protected areas in the Albertine Graben Region in Uganda with oil and gas licensed bloc areas indicated.



Each project has undergone an Environmental and Social Impact Assessment (ESIA)⁴ and has received Government approval in the form of a Certificate of Approval (CoA). As they have entered the development phase, the Kingfisher and Tilenga Projects⁵ are described in greater detail below.

Box 1: Details of key project facilities associated with the Kingfisher Project.

Source: Modified from Kingfisher ESIA Non-Technical Summary, 2018

Details of key project facilities associated with the Kingfisher Project

(Source: Modified from Kingfisher ESIA Non-Technical Summary, 2018) (CNOOC Uganda 2018).

Four well pads will be used to complete approximately 20 production wells and 11 water injection wells. Production wells will extract well fluids containing oil from the underground oil reservoirs.

Injection wells will be used to inject water that was heated in the central processing facility into the oil reservoir to force the oil upwards, to warm up the oil to flow more easily, and to safely dispose of large quantities of produced water that will be removed from the well fluids. Injection water will be treated to meet injection water quality specifications.

In the **Central Processing Facility**, petroleum will be separated from produced water and impurities from the wells drilled under Lake Albert which will be returned to the injection wells.

After processing, oil will be transported via a **feeder pipeline** to Kabaale, where Government intends to establish an industrial park including an oil refinery. Oil production is expected to maximize at 40,000 bpd in the third year of production.

Water for the project³ will be supplied from a **water intake station** on Lake Albert, having a planned capacity of 390 m³/hr.⁶ This will supply sufficient water for make-up injection water, potable water, and other water requirements at the Central Processing Facility.

LPG (**liquid petroleum gas**), which will yield approximately 9.1 MM standard cubic feet, 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.

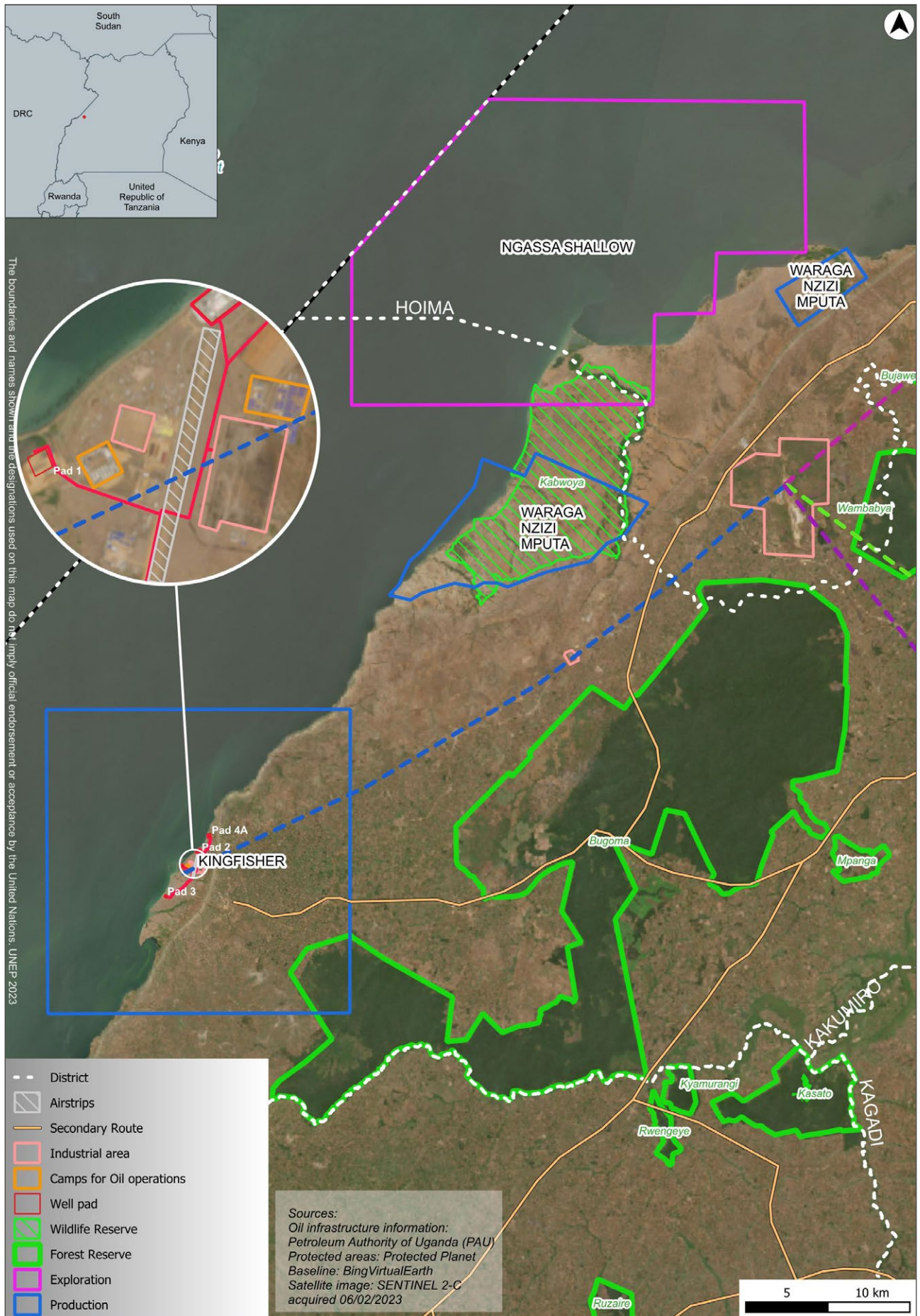
Supporting infrastructure includes flowlines from the well pads to the Central Processing Facility, access roads, an upgraded jetty, a water abstraction station on Lake Albert, temporary and permanent personnel camps, a materials yard, underground power cables, truck buffer yard, drilling storage yard, airfield/helipad and support structures, and a safety check station.

⁴ In accordance with Section 19 of the National Environment Act Cap 153 (Ref. 1-8) and Regulation 3 of the Environmental Impact Assessment Regulations, 1998 (Ref. 1-7), an ESIA is required before commencement of the Project.

⁵ The Tilenga Development Project is being undertaken by Total Exploration & Production Uganda B.V. (TEP Uganda, 28.3%), Tullow Uganda Operations Pty Ltd (TUOP, 28.3%), China National Offshore Oil Company Uganda Limited (CNOOC, 28.3%) and Uganda National Oil Company (UNOC, 15%). TEP Uganda is the operator. TUOP is in the process of transferring shares to TEP Uganda and CNOOC which would raise their ownership each to 37.5%.

⁶ This estimate includes provision for the maximum make-up injection water demand (~301 m³/hr in year 5), potable water demand of 52 m³/d and incidental (unaccounted) water demand, estimated to be in the order of 37 m³/hr, which takes into account water requirements for makeover of wells during operations which is an intermittent activity. The average daily water demand at the CPF, excluding domestic requirements is expected to be approximately 100 m³/day (CNOOC Uganda 2018).

Figure 3: Satellite image of the Kingfisher Development Project 2023.



Box 2: Details of key project facilities associated with the Tilenga Project.

Source: Modified from Tilenga ESIA Non-Technical Summary, 2019

Details of key project facilities associated with the Tilenga Project.

(Source: Modified from Tilenga ESIA Non-Technical Summary, 2019) (CNOOC Uganda *et al.* 2019).

A total of **34 well pads** are planned, each ranging in size from 3.2 to 4.4 ha and holding up to 22 wells for oil extraction (approximately 400 wells in total) and for the injection of produced water. Projected oil production will maximize at approximately 190,000 b/d after the second year of development. Each well pad will include a concrete area where the wells will be located. There will be a 15 m wide buffer from the perimeter security structure which will remain cleared of vegetation. Within the Murchison Falls National Park, an earthen bund wall will be constructed to prevent animals entering the well pads.

An **industrial area** will include equipment stockpiles, workshops, housing, and training centres to support the Project. A **Central Processing Facility** will be co-located in the industrial area and will be used to separate the produced oil, water, and gas from the well pads, stabilize the oil, treat, and utilize associated gas; and treat produced water/lake water for cleaning and re-injection. The industrial area and Central Processing Facility will occupy approximately 407 ha.

A **surface water abstraction centre** will be constructed at Lake Albert and along the Victoria Nile to supply water for use during Project operations. Additionally, several boreholes will be placed to extract ground water. Water demand from surface waters will maximize at approximately 708,000 m³/yr and at 860,670 m³/yr from ground water sources.

A **production and injection network** are comprised of buried pipelines having a combined length of approximately 180 km including production pipelines to transport the oil and produced gas, the water abstraction line from Lake Albert to the central processing facility, and water injection lines to transport water from the central processing facility back to the well pads for reinjection. The network will also include three pipelines (production pipeline, water injection pipeline and, electrical and fiber optic cables) crossing under the Victoria Nile at a minimum of 15 m beneath the riverbed.

A **new Nile ferry crossing** will be constructed approximately 135 m east of the existing Paara crossing to exclusively service Project activities. Associated structures will comprise a number of onshore facilities and landing approaches extending from both the north and south banks of the Victoria Nile.

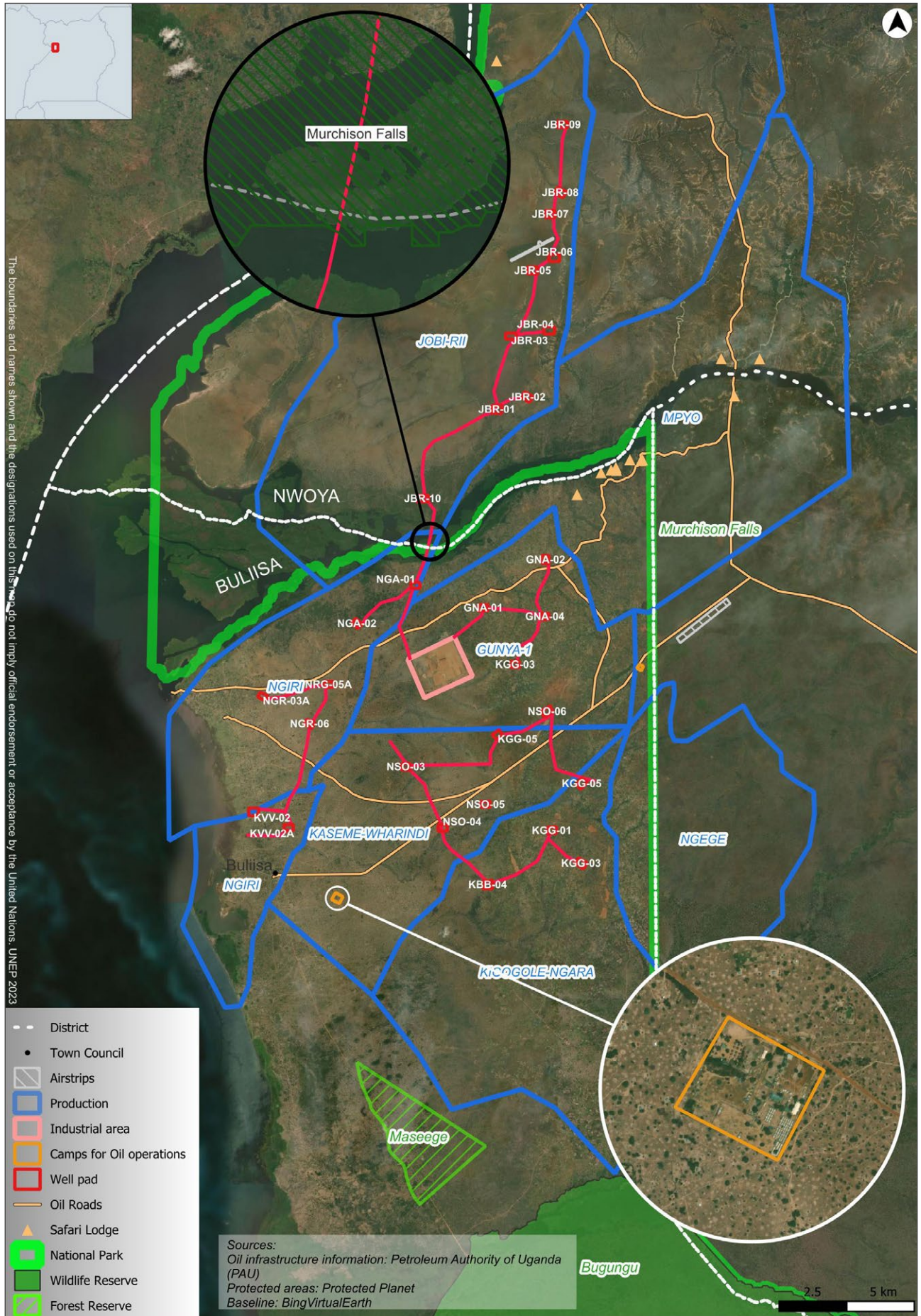
The Masindi vehicle check point will be used for security checks/regulation of traffic entering Project Area south Nile.

A **new support base** will be located at the site of the existing Tangi Camp and will comprise a number of permanent and temporary facilities to support the Project during construction and operations.

Several local roads will be upgraded or require new construction to meet Project access requirements.

Airstrip upgrade – Located within the Murchison Falls National Park, the existing Bugungu Airstrip will be upgraded and used to transport people and supplies by small aircraft. Tourist traffic and alternatives during construction will be coordinated with the Uganda Wildlife Agency.

Figure 4: Satellite image of the Tilenga Development Project 2023.



05

Legal Framework and Institutional Architecture Governing Environmental Governance in the Oil and Gas Sector in Uganda

A. Laws, Policies and Regulations

A host state needs to regulate petroleum activities in its jurisdiction and develop strategic policies to develop its resources. This often involves specialized legislation (such as petroleum, natural gas, or hydrocarbons law), which operates with other relevant legislation such as environmental laws.

The Constitution of the Republic of Uganda is the supreme law of Uganda and is the basis for all development-related policies, legal provisions, and related outcomes. Principle XIII of the Constitution mandates the state to protect the natural resources including land, water, wetlands, minerals, oil, fauna, and flora on behalf of the people of Uganda. Chapter 245 articulates that the parliament shall, by law, provide for measures to protect and preserve the environment from abuse, pollution, and degradation; manage the environment for sustainable development; and promote environmental awareness.⁷ These measures have been provided through the development of various policies, laws, regulations, and standards for sustainable and natural resources management in Uganda.

Uganda has made considerable strides in strengthening its legal and regulatory standards for stronger environmental management since the 2017 CNA draft report

Uganda has made considerable strides in strengthening its legal and regulatory standards for stronger environmental management since the 2017 CNA draft report. UNEP has developed a checklist to assess the current status of environmental policy, legal and regulatory frameworks in the context of upstream oil and gas exploration and development, based on international best practices. This checklist has been updated for Uganda in Annex C. Table A1 provides a list and the status of the policies relevant to strengthening environmental governance in the oil and gas sector. Table A2 provides a checklist for the current status of the necessary legislative and regulatory instruments in Uganda and Table A3 takes a broader look at the existence of legal provisions across relevant environmental and petroleum legal and regulatory instruments that can address environmental aspects in relation to oil and gas development. Annex C also includes a checklist of the relevant international conventions and multilateral environmental agreements.

⁷ Constitution of the Republic of Uganda 1995. Article 245.

B. Uganda's Administrative Structure

Uganda's administrative structure is a decentralized system that consists of multiple levels of government (see **Figure 5**). At the top is the central Government, headed by the President, who is both the Head of State and the Head of Government.⁸ The central Government is responsible for national-level policymaking, legislation, defence, and foreign affairs.⁹ It comprises various ministries and government departments that oversee specific areas of governance, such as finance, health, education, agriculture, and infrastructure.

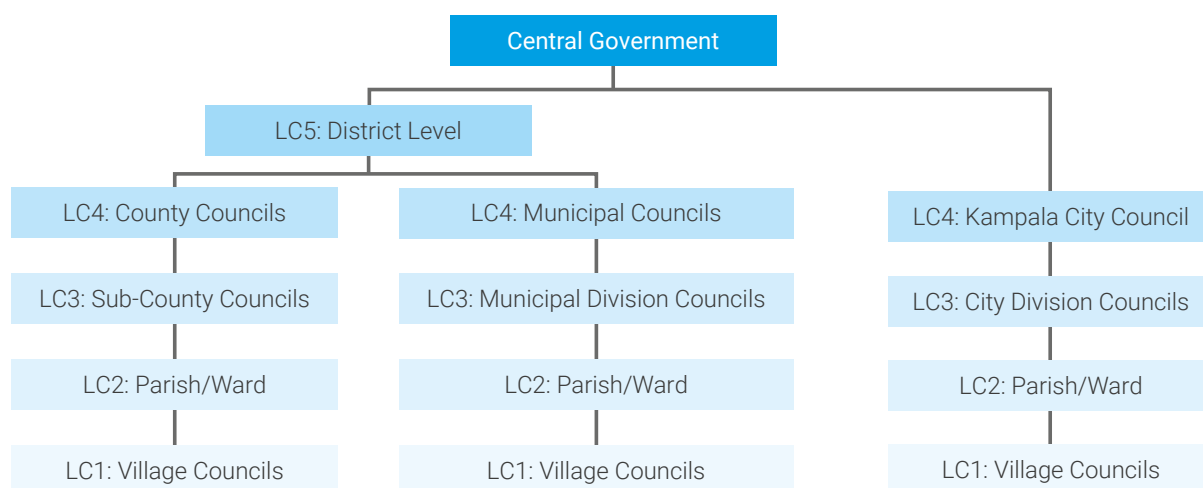
Uganda's administrative structure is a decentralized system that consists of multiple levels of government

Districts are responsible for implementing national policies and delivering public services at the local level. They have their own administrative structures, including district councils and various departments responsible for sectors like health, education, agriculture, environment and natural resources, and local infrastructure development (MLG 2022). Uganda's administrative structure also incorporates the participation of traditional institutions, such as traditional leaders and local councils at the village level.

Under Uganda's decentralized environment and natural resources management, as envisioned by the Local Government Act of Uganda 1997,¹⁰ there is shared responsibility between the central Government, the local governments (both the higher local and the lower local governments) and the local communities (Hartter and Ryan 2010). The central Government, its agencies and departments have primary responsibility for national policy formulation and technical guidance, national legislation and regulation, standards and quality control, monitoring/inspection and supervision, and capacity building.

The urban and district councils that form the local government are responsible for the management of the environment and natural resources under their jurisdiction and have the power to promulgate ordinances and bylaws to this end. The key mandates and functions of districts in relation to environmental governance in the petroleum sector are discussed further under Section 06.D.

Figure 5: Uganda's governance/administrative structure.



⁸ Constitution of the Republic of Uganda 1995. Article 98.

⁹ Government of Uganda. (2022). *Ministries*. [online] Available at: <https://www.gou.go.ug/ministries> [Accessed 18 October 2023].

¹⁰ Constitution of the Republic of Uganda 1995. Article 206.

06

Understanding Environmental and Pollution Risks in the Petroleum Sector: Thematic Areas of Focus in the CNA

Oil and gas operations pose significant potential environmental risks that can have detrimental effects on human health and the environment. This includes emissions to air, water pollution and unsustainable water abstraction, oil spills and other accidental and hazardous discharges, land degradation and contamination, potential harm to biodiversity and ecosystems arising out of the development activities themselves, etc.

Environmental and pollution risks should be avoided or prevented and can be mitigated by implementing best available technologies and establishing robust environmental compliance and monitoring governance systems to ensure that industry practices are aligned with international best practice and compliant with national standards. Strong stakeholder engagement and communication with local communities, and addressing potential negative social and health impacts, is also critical for maintaining public accountability in the sector.

Uganda Vision 2040 is anchored on attaining “A Transformed Ugandan Society from a Peasant to a Modern and Prosperous Country within 30 years”. Uganda’s Vision 2040 identifies the oil and gas sector as crucial in spurring economic growth and development.

Box 3: Uganda’s Vision 2040 (National Planning Authority 2012)

One key principle of Vision 2040 is to ensure sustainable development which preserves the environment and natural resources. To achieve this vision, Uganda implements five-year National Development Plans (NDP). The NDP III, which Uganda is currently implementing, introduced the programmatic approach to planning, budgeting, and implementation through 19 programmes; this includes the Environment, Natural Resources, Climate Change and Land Management programme (ENRCCLM) and the Sustainable Development of Petroleum Resources Programme (SDPR).

The goal of the ENRCCLM programme is to reduce environmental degradation and adverse effects of climate change, as well as improve utilization of natural resources for sustainable economic growth and livelihood security. The goal of the SDPR programme is to attain equitable value from petroleum resources and spur economic development in a timely and sustainable manner. These two programmes seek to ensure that Uganda maximizes development benefits from its oil and gas resources in a sustainable manner and are supported by the various policy, legal and regulatory frameworks which have been put in place.



A local herder with his cows on the Kingfisher oil development field along Lake Albert in 2017.
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In January 2023, the four thematic areas of focus for the CNA were finalized in coordination with the core CNA technical working group (MEMD, MWE, NEMA, UWA and PAU). These themes are indicative of the country's current priorities vis-à-vis environmental management in its oil and gas sector. The report's key findings draw from key issues raised under the thematic focus areas during stakeholder consultations.

A. Emissions and Discharges

The upstream oil and gas sector activities produce various streams of discharges¹¹ and wastes that have the potential to pose environmental harm to water resources. They generate large quantities of produced water,¹² process wastewater¹³ and stormwater,¹⁴ which, depending on the level of contamination, must be treated before discharged back into the environment. One of the largest waste streams associated with oil and gas activities is produced water, which is the naturally occurring water present in underground formations that is brought to surface along with oil during exploration and production. Produced water contains soluble and non-soluble oil/organics, suspended solids, dissolved solids, and various chemicals used in the production process. Re-injection of treated produced water into the reservoir are necessary in Uganda to limit the over-utilization of water resources and prevent surface contamination. Water discharged during hydrostatic testing of pipelines must also conform to regulatory requirements. Additionally, sewage and grey water from living and working quarters need to be treated before discharge.

Oil and gas exploration and production activities handle a range of chemicals as part of routine operations. The following types of chemicals are commonly used during operations: drilling fluids, acetic acid, corrosion inhibitors, biocides, naphthenate dispersants, oil anti-foam, de-emulsifiers, scale and dispersion inhibitors, various polymers, caustic soda,

The upstream oil and gas sector activities produce various streams of discharges and wastes that have the potential to pose environmental harm to water resources

¹¹ Discharges: intentional releases from a facility into a waterway, typically through a permitted outlet after treatment (IPIECA 2023).

¹² Produced water: water that is brought to the surface during the production of hydrocarbons including formation water, flow-back water, and condensation water. *ibid*

¹³ Process wastewater: water associated with operations that comes into contact with hydrocarbons or other chemicals. *ibid*.

¹⁴ Stormwater: precipitation falling on (or run-off flowing across) a site, which is collected and discharged from point source outlets, such as pipes, collection ditches, storm sewers. *ibid*

and oxygen scavengers. Principal among the hazardous wastes produced during operations are water-based and synthetic-based drill cuttings (fragments of rock raised during drilling) and drilling fluids. On a much smaller scale are wastes from expended batteries, electronics, light bulbs, medical wastes, cables, oily wastes, treated wood products, bitumen, and sanitary wastes. Chemicals and chemical waste should be adequately managed to avoid long-lasting environmental impacts, which can affect livelihoods and public health.



If the world is to achieve the 1.5°C (or even a 2°C) global temperature target, deep reductions in methane emissions must be achieved by 2030

Similarly, air emissions from oil and gas exploration and production have impacts on the local and regional air quality and contributes to global climate change. Particularly relevant to the oil and gas sector, short-lived climate pollutants such as methane and black carbon, are responsible for up to 45% of current global warming (CCAC 2023). Methane is a powerful greenhouse gas, with a Global Warming Potential over 80 times more than that of carbon dioxide (CO₂) over its 10-to-12-year lifespan (CCAC 2019). Methane is responsible for about a quarter of today's global warming. If the world is to achieve the 1.5°C (or even a 2°C) global temperature target, deep reductions in methane emissions must be achieved by 2030 (IPCC 2018). The oil and gas sector is one of the largest man-made emission sources, responsible for 24% of global anthropogenic methane emissions (Global Methane Initiative 2020). The oil and gas industry is also a major emitter of black carbon, much of which results from inefficient combustion during the flaring of unwanted associated gas, with harmful consequences for human health and the environment. Other categories of significant emissions include volatile organic compounds (VOCs); sulphur oxides (SO_x); nitrogen oxides (NO_x), excluding N₂O; carbon monoxide; particulate matter (PM); and ozone-depleting substances (ODS).

In Uganda, the key legal instruments that govern routine emissions and discharges from the oil and gas sector include the National Environment Act 2019, the National Climate Change Act 2021, the Petroleum (Exploration, Development and Production) Act 2013, the National Water Act (Cap 152 of the Laws of Uganda) 1999, the National Environment (Waste Management) Regulations 2020 (SI No. 49), the Water (Waste Discharge) Regulations 1998 (SI No. 32), the Petroleum (Waste Management) Regulations, 2019 (SI No. 3), the Petroleum (Exploration, Development and Production) (Health, Safety and Environment) Regulations 2016 (SI No. 46), and the National Environment (Standards for Discharge of Effluent into Water or Land) Regulations 2020 (SI No. 144). The National Environment (Air Quality Standards) Regulations and the National Environment (Management of Hazardous Chemicals and Products Containing Hazardous Chemicals) Regulations are currently still in their draft forms (Air Quality Fellows 2023).

Both the National Environment Act 2019 and the Petroleum Act 2013 establish the operator's duty to take measures to prevent, stop and remove pollution, and follow the polluter pays and precautionary principles of international environmental law.¹⁵ Uganda follows a cradle to grave approach of waste management through the principle of extended producer responsibility and product stewardship.

Under the National Environment (Environmental and Social Impact Assessment) Regulations 2020, oil and gas project proponents are required to include an estimate of expected emissions and wastes produced (by type and quantity) during the various phases of the project in the scoping and environmental and social impact assessment (ESIA) studies undertaken, as well as develop waste management and chemicals management plans to eliminate or reduce the effects of their operations.

¹⁵ National Environment Act 2019. ss 3(5)(a), 4, 80, 81, 85, 91; Petroleum (Exploration, Development and Production) Act 2013 [Part X].

B. Acute Pollution Risks

Exploration activities always include elements of risk. Accidents and unplanned pollution releases can happen, and emergency preparedness and response greatly contribute to mitigating impacts to the environment and personnel. Accidental events include oil spills (on land and at sea) as well as other types of spills e.g., chemical spills.

The National Environment Act 2019 (NEA 2019), the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations 2020, and the National Oil Spill Contingency Plan 2020 (NOSCP)¹⁶ are the key legal instruments governing acute pollution from the oil and gas industry. The NEA 2019 defines 'acute pollution' as 'significant pollution that occurs suddenly and demands immediate response to protect human health and environment'.¹⁷

A significant amount of Uganda's oil and gas reserves are situated in the ecologically sensitive Murchison Falls National Park region, while the Kingfisher field, is located offshore beneath the bed of Lake Albert. Similarly, the Ngassa Field, currently under appraisal, is also offshore, lying beneath Lake Albert (PAU 2023e). There is a potential risk that oil or other related spills could enter river and lake systems and potentially reach the waters and shorelines of neighbouring Democratic Republic of the Congo (DRC). Furthermore, Lake Albert is fed by the Nile River with DRC, South Sudan, Sudan, and Egypt as its downstream riparian countries.

Posing a transboundary risk is the East African Crude Oil Pipeline (EACOP), a 1443 km underground and cross-border pipeline project that will transport crude oil from Kabaale, Hoima District in Uganda to the Chongoleani peninsula near Tanga in the United Republic of Tanzania where there will be a Marine Storage Terminal and Load out Facility for tanker export. Once completed, the underground/buried pipeline will be the longest heated crude oil pipeline in the world (EACOP 2023b).



A giraffe in Murchison Falls National Park 2017.
© UNEP-WCMC/Sharon Brooks

¹⁶ The National Oil Spill Contingency Plan 2020 was developed by NEMA, PAU and the OPM under section 93, National Environment Act 2019 and guided by the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations 2020.

¹⁷ National Environment Act 2019. ss 2, 89-95.

C. Potential Impacts on Environmentally Sensitive and Protected Areas

The upstream oil and gas life cycle of exploration, development, production, and decommissioning presents several potential risks to biodiversity and environmentally sensitive habitats. Direct impacts include direct species mortality and disturbance (e.g., migration or breeding) and introduction of invasive alien species (e.g., through transportation, and re-vegetation programs). Indirect impacts include changes to local economic conditions (e.g., deforestation and agricultural expansion), and increased population influx in local communities putting pressures on domestic services (e.g., food and water use, waste management). Women being the main dependants on natural resources for their livelihoods can also be directly affected due to access of these resources, impacting their economic activities and wellbeing. (UN Women Watch 2009). Cumulative impacts include diminishing wildlife habitats and over-abstraction of water resources resulting from multiple petroleum operations. Impacts vary during the project lifecycle and may include physical disturbance, noise and light pollution, and waste generation.

Uganda has several legal instruments that govern, and address aspects related to the impact of oil and gas activities on biodiversity. These include:

- National Environment Act 2019,
- Wildlife Act 2019,
- National Environment (Wetlands, Riverbanks and Lakeshores Management) Regulations 2000 (SI No. 153-5),
- National Environment (Environmental and Social Impact Assessment) Regulations, 2020 (SI No. 143),
- National Environment (Noise Standards and Control) Regulations 2003,
- Operational Guidelines for Developments in Wildlife Protected Areas 2020,
- Biodiversity Offset Guidelines to address Residual Impacts of Developments in Sensitive Ecosystems 2022 (NEMA 2022a),
- National Policy for the Conservation and Management of Wetland Resources 1995,¹⁸ and
- National Biodiversity Strategy and Action Plan (NBSAP) II 2015-2025 (NEMA 2016).

One of the strategic objectives of Uganda's NBSAP II 2015 - 2025 is to strengthen stakeholder coordination and frameworks for biodiversity management in the country through the multi-agency Technical Committee on Biodiversity Conservation led by NEMA.

Uganda has a total of 40 protected areas: 10 national parks, 12 wildlife reserves, five community wildlife management areas and 13 wildlife sanctuaries (UWA 2023). Of these, 10 protected areas are found in the Albertine Graben region. The protected areas where oil and gas activities are currently underway include, Murchison Falls National Park, Bugungu Wildlife Reserve, Kabwoya Wildlife Reserve, Toro Semuliki Wildlife Reserve, and Queen Elizabeth National Park. The new basin prospects are located in Pain Upe Wildlife Reserve and Bokora-Matheniko Wildlife Reserve.

Dependent on these protected areas, Uganda's tourism sector is the country's single largest earner of foreign exchange, amounting to USD 1.45 billion in FY 2017/2018, approximately 7.3% of the country's GDP (English and Ahebwa 2019). National Development Plan-III aims to increase the increase annual tourism revenues from USD 1.45 billion to USD 1.862 billion by FY 2024/2025.

The Operational Guidelines for Developments in Wildlife Protected Areas, which was finalized in 2020, addresses operational issues that are not usually covered in the ESIA process. Two of its objectives are to minimize long and short-term negative impacts of developments on the integrity of protected areas and associated ecological processes, and to minimize the negative impacts of development activities on tourism.

¹⁸ Ministry of Natural Resources (1995). National Policy for the Conservation and Management of Wetland Resources. [online] Available at: <https://faolex.fao.org/docs/pdf/uga201563.pdf> [Accessed 22 Oct. 2023].

Uganda's tourism sector is the country's single largest earner of foreign exchange, amounting to USD 1.45 billion in FY 2017/2018

D. Capacity of District Local Government Functionaries to Implement their Mandates on Environmental Governance

Under the National Environment Act (NEA) 2019, every district is mandated to establish a district Environment and Natural Resources Committee (DENRC) comprising of the District Chairperson, the Chief Administrative Officer (CAO), the members of Parliament from the District, the Secretary for Environment, the District Natural Resources Officer who shall be the secretary to the committee, the District Engineer, the District Physical Planner, the Community Development Officer, the Mayor, the town clerk, and the Secretary for Environment at the Urban Council.¹⁹

The DENRC is assigned with the function to:

- i. Coordinate activities of urban and district council relating to environment and natural resources management.
- ii. Assist in preparation and approval of district environmental action plans.
- iii. Assist in preparation of urban, district or other lead agency State of the Environment Reports.
- iv. Prepare the district State of the Environment Report.
- v. Promote the dissemination of information on the environment.
- vi. Ensure that ENR concerns are fully integrated into district development plans approved by the district councils.
- vii. Coordinate with NEMA on all issues relating to ENR management.
- viii. Assist in formulation and enforcement of ordinances and byelaws relating to ENR management.
- ix. Monitor all activities to ensure that they do not impact negatively on the environment.

The district local government functionaries who carry out environmental governance and management functions are under the Department of Environment and Natural Resources which is headed by the District Natural Resources Officers (DNRO) and includes other technical staff like the District Environmental Officers (DEO) and the District Forestry Officer. For management of other natural resources, the districts may also have a Water Officer, a Lands Officer, Physical Planner, Agricultural Officer, and a Fisheries Officer.



Local community in Pakwach 2017.
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¹⁹ National Environment Act 2019. ss 26-30.

D.1. Roles and mandates

The main function the Department of Environment and Natural Resources in the districts is to increase the district capacity to plan and implement environmental programmes leading to better socio-economic development of the district while maintaining or improving the environment and natural resources base (Nebbi DLG 2023).

The NEA 2019 provides the DNRO, or a DEO appointed by a lead agency²⁰ at subnational level the mandate to:

- i. Function as Secretary to the District Environment and Natural Resources Committee (DENRC)
- ii. Advise the district council on all matters relating to the environment.
- iii. Liaise with NEMA on all matters relating to environment management.
- iv. Advise on environmental matters before any dealings in land.
- v. Keep records of information on the environment and the utilization of ENR in their jurisdiction.
- vi. Participate in the review of laws, development of ordinances and byelaws on ENR.
- vii. Support the DENRC in the preparation and approval of the district environmental action plans and in the preparation of the district State of the Environment Report.
- viii. Promote environmental awareness and literacy.

DNRO and DEO functions that are particularly significant from the perspective of environmental governance in the oil and gas sector, as stipulated under the NEA 2019 include:²¹

- i. Monitor all activities within jurisdiction to ensure compliance with the national environmental laws.
- ii. Assist environmental inspectors or auditors in the performance of their functions. Where so designated, carry out the role of an environmental inspector.
- iii. Participate in review of environmental impact assessment, audit or other reports submitted on a regular basis to NEMA.
- iv. Conduct monthly environmental and social monitoring of subprojects during project implementation to ascertain compliance with the ESMP mitigation measures. These monitoring reports are shared with NEMA every quarter.
- v. Ensure compliance with approvals related to segment their lead agency is responsible for and notify NEMA as appropriate.
- vi. Assist in preparation and approval of environmental action plans.
- vii. Assist in preparation of urban, district or other lead agency state of the environment report.

NEMA and lead agencies provide technical backstopping to District level authorities and capacity building on environmental issues where necessary. The DNROs and district environmental officers join NEMA and other lead agencies in their planned quarterly visits to the oil field sites.

²⁰ National Environment Act 2019. s 2. The District Environment Officers may be appointed or designated by a 'lead agency' defined as a ministry, department, agency, local government, or a public officer.

²¹ National Environment Act 2019. ss 28-30.



District Local Government Office Hoima March 2023.
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07

Key Findings and Recommendations

Box 4: List of Key Findings.

List of Key Findings

- 01 Most of the key environmental governance framework laws and regulations of Uganda have been enacted and adopted, with some exceptions.
- 02 The institutional architecture for environmental governance in the oil and gas sector in Uganda is in place – but requires earmarked funding to enable coordination between Ministries, Departments and Agencies (MDAs).
- 03 Waste management infrastructure in Uganda has improved since 2017 but monitoring of capacity needs is important, especially as new fields are developed.
- 04 Anticipating future water demands and produced water disposal is needed for sustainable water resource management.
- 05 Oil and gas production can occur with near-zero methane emissions with adequate design and mitigating measures taken from the start. Regulating and monitoring GHG emissions should be prioritized, especially in the production phase.
- 06 Oil spill and emergency response preparedness need to be strengthened and include transboundary considerations.
- 07 Continuous monitoring of the impact of oil and gas activities on biodiversity and co-existence with tourism activities is more critical than ever in the development and production phase.
- 08 Institutional capacity in both national and district government institutions to implement environmental oversight of oil and gas activities remains inadequate.
- 09 Data management for environmental governance related to oil and gas issues needs to be strengthened.
- 10 Public outreach and awareness raising should be continued to foster public dialogue, information exchange, and accountability.
- 11 New and increased multi-sectoral development activities and subsequent potential direct and cumulative impacts indicates need for a fresh or updated strategic environmental assessment for all affected districts.

FINDING 1:

Most of the key environmental governance framework laws and regulations of Uganda have been enacted and adopted, with some exceptions.

Current Status

Uganda is currently well-covered when it comes to having adequate legislations in place to support environmental governance in the oil and gas sector, with a few exceptions. The updated legal policy checklists in this report provide an overview of the current legal, policy and regulatory instruments in effect in Uganda (Annex C).

Since 2017, Uganda has updated and enacted several of its key national framework laws, policies, and regulations. These include:

- i. National Environment Act 2019
- ii. National Climate Change Act 2021
- iii. Uganda Wildlife Act 2019
- iv. National Local Content Act 2022
- v. National Fisheries and Aquaculture Policy 2018
- vi. National Content Policy for the Petroleum Subsector in Uganda 2018
- vii. National Environment (Strategic Environmental Assessment) Regulations 2020
- viii. National Environment (Environmental and Social Impact Assessment) Regulations 2020
- ix. National Environment (Audit) Regulations 2020
- x. National Environment (Standards for Discharge of Effluent into Water or on Land) Regulations 2020
- xi. National Environment (Waste Management) Regulations 2020
- xii. Petroleum (Waste Management) Regulations 2019
- xiii. National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020

The Ministries, Departments and Agencies (MDAs) have also since developed relevant national guidelines:

- i. Guidelines for Strategic Environmental Assessment 2020
- ii. Operational Guidelines for Developments in Wildlife Protected Areas 2020
- iii. National Guidelines for Biodiversity and Social Offsets 2022
- iv. Environmental Guidelines to Local Government for Strengthening Compliance with Safeguard Requirements in Development Projects 2020

The following legal instruments are either in the draft versions or under review as of November 2023:

- i. National Environment (Management of Hazardous Chemicals and Products Containing Hazardous Chemicals) Regulations (draft)
- ii. National Environment (Air Quality) Standards and Regulations (draft)
- iii. National Energy Transition Policy (draft)
- iv. Biodiversity Offset Guidelines to address Residual Impacts of Developments in Sensitive Ecosystems (draft)
- v. National Petroleum Policy 2008 (under review)
- vi. National Forest Policy 2001 (under review)
- vii. National Water Act 1997 (under review)
- viii. National Water Policy 1999 (under review)
- ix. National Policy for the Conservation and Management of Wetland Resources 1995 (under review)
- x. National Environment Management Policy 1994 (under review)
- xi. National Policy for Disaster Preparedness and Management 2011 (under review)

Additionally, the Petroleum Authority of Uganda developed the Model Production Sharing Agreement, which is governed by Ugandan laws, and has made this Model Agreement publicly available (Uganda NOC 2018). Any changes in laws of Uganda regarding health, safety and environment will also apply to previously concluded Production Sharing Agreements.

Uganda is States Party to and has ratified/acceded to key multilateral environmental agreements:

- i. United Nations Framework Convention on Climate Change (UNFCCC) 1992,
- ii. Protocol to the United Nations Framework Convention on Climate Change (Kyoto Protocol) 1997
- iii. Paris Climate Accord 2015
- iv. Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal 1989
- v. Convention on Biological Diversity 1992
- vi. Cartagena Protocol on Biosafety to the Convention on Biological Diversity 2000
- vii. Rotterdam Convention on the Prior Informed Consent Procedure 1998
- viii. Stockholm Convention on Persistent Organic Pollutants 2001
- ix. United Nations Convention to Combat Desertification 1994
- x. Montreal Protocol on Substances that Deplete the Ozone Layer 1987
- xi. Vienna Convention for the Protection of the Ozone Layer 1985
- xii. Convention on International Trade in Endangered Species of Wild Fauna and Flora 1973

- xiii. Minamata Convention on Mercury 2013
- xiv. Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety 2010
- xv. African Convention on the Conservation of Nature and Natural Resources (revised), 2003
- xvi. Convention on the Conservation of Migratory Species of Wild Animals 1979
- xvii. Agreement on the Conservation of African-Eurasian Migratory Waterbirds 1995
- xviii. Ramsar Convention on Wetlands of International Importance 1971
- xix. UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage 1972
- xx. Convention for the Safeguarding of the Intangible Cultural Heritage 2003
- xxi. UN Convention on the Law of the Sea 1972
- xxii. Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa 1991
- xxiii. Agreement on the Nile River Basin Cooperative Framework 2010

Key Issues

Several key legal instruments remain to be developed. While Uganda does have the National Oil Spill Contingency Plan (NOSCP) 2020, National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020 and a National Policy for Disaster Preparedness and Management, there is still no national regulations on air emissions (GHG/Methane emissions), regulations on decommissioning and regulations on cultural sites affected by oil and gas activity are yet to be developed.

There is also no distinct permitting regime in place for emergency gas flaring and venting from oil and gas activities nor for pollution licenses. Clear regulations are needed for the measuring, reporting, and verification of greenhouse gas emissions, including methane emissions, due to petroleum activities for purposes of ensuring that best available technology is used to reduce potential fugitive emissions, venting, and flaring.

With regards to multi-lateral agreements, Uganda is not States Party to the following agreements:

- i. International Convention for the Prevention of Pollution from Ships (MARPOL) and Protocols 1973/1978 with annexes
- ii. International Convention on Oil Pollution Preparedness, Response and Co-operation 1990
- iii. London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (revised 1996)
- iv. Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (revised 1996)
- v. International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004

Way Forward and Recommendations

- 1.1. Primary legal and regulatory instruments such as the national regulations on chemical management, and regulations on greenhouse gas (GHG) emissions in the petroleum sector should be finalized and adopted at the earliest.
- 1.2. In the process of developing national regulations on GHG emissions, special focus should be placed on methane emissions as a potent greenhouse gas specifically arising from the petroleum sector. This should address issues relating to leaks, equipment venting, associated gas venting, and flaring, in context of measurement, monitoring and reporting. Oil operators, especially those such as TotalEnergies which are members of the Oil and Gas Methane Partnership (OGMP), should ensure they maintain international best practice standards with regards to methane emissions reduction, monitoring and reporting are being applied, once production comes online. There is also a need for setting a robust permitting regime for pollution control licenses under the NEA 2019.
- 1.3. Secondary instruments such as a national policy on energy transition, regulations on decommissioning, regulations on produced water disposal, and regulations or guidelines on cultural sites affected by oil and gas activity should also be developed to further bolster sustainable management of the country's petroleum resources. Development of a national policy on energy transition should also be aligned together with Uganda's climate change policy and petroleum policy.
- 1.4. To support Uganda's efforts to reduce oil and other acute pollution risks and further bolster its National Oil Spill Contingency Plan, Uganda should consider becoming States Party to MARPOL and its Protocols, the International Convention on Oil Pollution Preparedness, Response and Co-operation 1990, the London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 and its Protocol, and the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004. Where relevant, such accession can include declarations making it applicable to Uganda's internal waters.
- 1.5. Ongoing reviews of the National Petroleum Policy 2008, National Forest Policy 2001, National Water Act 1997, National Water Policy 1999, National Environment Management Policy 1994 and the National Policy for Conservation and Management of Wetland Resources 1995, must all reflect Uganda's broader climate goals and commitments on climate change and biodiversity. At the same time, new policies will need to anticipate emerging environmental challenges posed by oil and gas production over the next 25 years.

In the process of developing national regulations on GHG emissions, special focus should be placed on methane emissions as a potent greenhouse gas specifically arising from the petroleum sector

FINDING 2:

The institutional architecture for environmental governance in the oil and gas sector in Uganda is in place – but requires earmarked funding to enable coordination between Ministries, Departments and Agencies (MDAs).

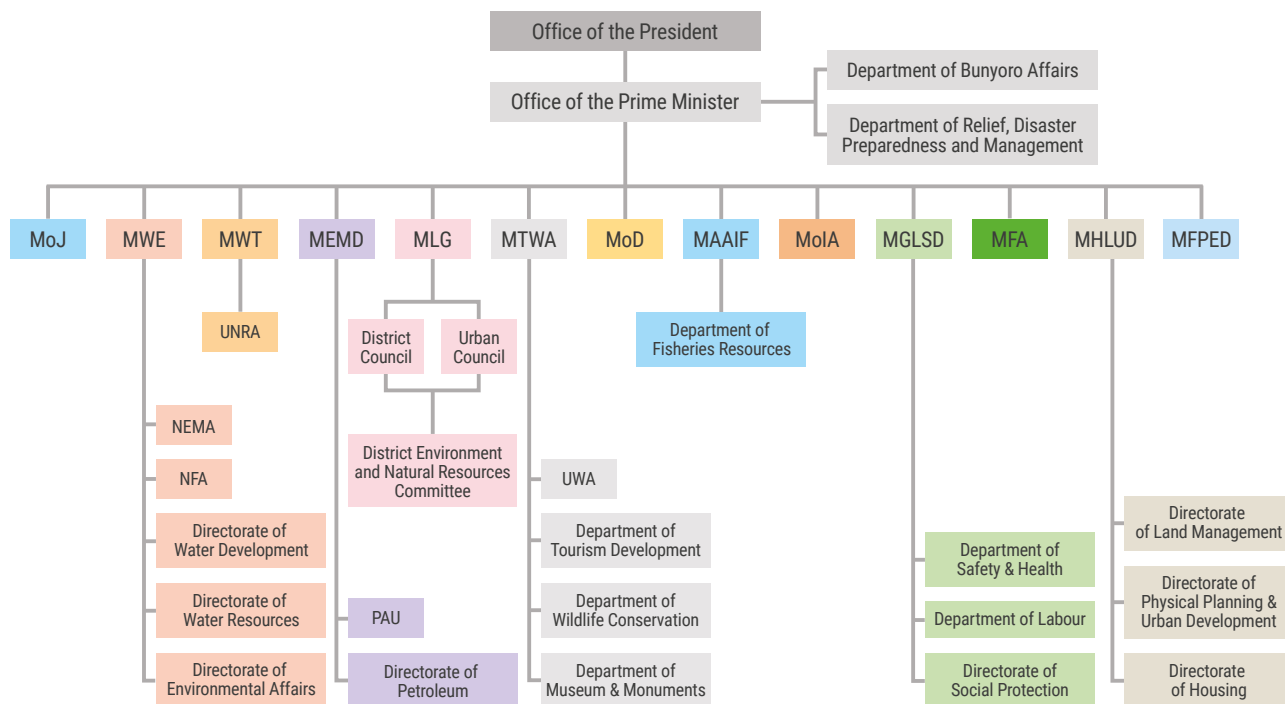
Current Status

Uganda's environmental governance architecture encompasses various institutions, policies, and regulations that are responsible for managing and protecting the country's natural resources and addressing environmental challenges. The following are the main Government institutions with environmental governance- and environmental management-related roles and responsibilities in the oil and gas sector in Uganda (See **Figure 6**).

- **Ministry of Water and Environment** (MWE), which includes the National Environment Management Authority (NEMA), the Directorate of Water Resources Development (DWRD), Directorate of Water Development, Directorate of Environmental Affairs, and the National Forestry Authority (NFA)
- **Ministry of Energy and Mineral Development** (MEMD), which include the Petroleum Authority of Uganda (PAU) and the Directorate of Petroleum
- **Ministry of Tourism, Wildlife and Antiquities** (MTWA), which includes the Department of Tourism Development, Department of Wildlife Conservation, and Department of Museum and Monuments, and Uganda Wildlife Authority (UWA)
- **Department of Disaster Preparedness and Management** under the Office of the Prime Minister (DDPM-OPM)
- **Ministry of Foreign Affairs** (MFA)
- **Ministry of Gender, Labour, and Social Development** (MGLSD), which includes the Department of Safety and Health, Department of Labor, Directorate of Social Protection
- **Ministry of Agriculture, Animal Industry and Fisheries** (MAAIF), which includes the Department of Fisheries Resources
- **Ministry of Housing, Land and Urban Development** (MHLUD), which includes the Directorate of Land Management, Directorate of Physical Planning and Urban Development, and Directorate of Housing
- **Ministry of Local Government** (MLG), which includes Districts and Urban Councils
- **Ministry of Works and Transport** (MWT), which includes the Uganda National Roads Authority (UNRA)

Annex D lists the relevant mandates of these MDAs vis-à-vis the environment and oil and gas sector.

Figure 6: Institutional Organogram of Environmental Governance of the Oil and Gas Sector in Uganda. Of the MDAs involved, NEMA is the lead national coordinating agency for environmental management and governance.



NEMA is the lead national coordinating agency for environmental management and governance

The National Environment Management Authority (NEMA) is the principal agency in Uganda for regulating, monitoring, supervising, and coordinating all activities related to the environment. The Petroleum Authority of Uganda (PAU), Ministry of Energy and Mineral Development (MEMD), Ministry of Tourism, Wildlife and Antiquities (MTWA), Uganda Wildlife Authority (UWA), Office of the Prime Minister (OPM), and the Ministry of Water Resources and Environment (MWE), are among the other MDAs who hold other key mandates in environmental governance in the oil and gas sector in Uganda.

National Environment Act 2019 clarifies that lead agencies, which includes local government, are mandated to perform their duties relating to environmental management as prescribed by the relevant applicable laws, notwithstanding NEMA's role as the principal environmental regulatory agency. Lead agencies have the responsibility to plan, regulate, and manage the segment of the environment that is within their respective mandates.

NEMA is the licensing authority for ESIA permits in the form of Certificate of Approvals, licences to deal in hazardous chemicals or products containing hazardous chemicals, temporary noise pollution permits, pollution control licenses, wetland use permits, license to import/export waste, and license to manage waste. MWE is the licensing authority for water abstraction permits and wastewater discharge permits. The license to operate in the petroleum sector is granted by MEMD. PAU is the lead agency for monitoring and regulating the oil and gas sector. UWA is the permitting authority in-charge of access permits for petroleum operations within Protected Areas, park entry, site acquisition, ferry processing, landing permits, routing of approved access roads, permit for extractive use of park resources, and approval for introduction of materials from outside the park.

At the district level, Urban and District councils are empowered to make relevant regulatory ordinances and bylaws that are consistent with the national laws. (For further discussion, see Section 06.D). A prospective waste management facility is required to obtain the local government's written consent while submitting its application for NEMA's approval.

Key Issues

While UNEP's consultations indicated a high level of commitment from key Government institutions, Uganda does not currently have a functional, institutional coordination mechanism between MDAs on environmental governance in the oil and gas sector. Despite the clear mandates and streamlined reporting mechanisms between institutions led by NEMA as the lead coordinating agency, coordination among MDAs, for instance while undertaking compliance monitoring field visits, can still be improved to reduce duplication of efforts and increase resource use efficiency.

Several mechanisms are available to aid coordination among MDAs. The 2013 SEA established the **Multi-Institutional Technical Implementation Committee** to monitor the implementation of the SEA recommendations (MEMD 2013). The Committee was originally composed of 16 key MDAs. This composition of the Committee, led by MEMD, was endorsed by the Cabinet in 2015. However, since then, more institutions have been added to the Committee and it now includes 21 MDAs: MEMD, NEMA, UWA, Office of the President (Internal Security), Ministry of Lands, Housing and Urban Development (MLHUD), MTWA, MWE, Ministry of Agriculture, Animal Industries and Fisheries (MAAIF), Ministry of Internal Affairs, Ministry of Works and Transport (MWT), Ministry of Finance Planning and Economic Development, Office of the Prime Minister (Disaster Preparedness), Office of the Prime Minister (Bunyoro Affairs), Ministry of Gender, Labour and Social Development (MGLSD), Ministry of Local Government (MLG), Ministry of Defence, Ministry of Foreign Affairs (MFA), Ministry of Justice and Constitutional Affairs, National Forestry Authority (NFA), Petroleum Authority of Uganda (reconstituted, previously Petroleum Exploration and Development Directorate), and Uganda National Roads Authority (UNRA). This newer composition of the Committee has not been formally endorsed. As per its 2014 Terms of Reference, the Technical Implementation Committee was expected to meet every quarter and submit quarterly reports to the Cabinet Committee on Oil and Gas²².

The Committee undertook the task of monitoring the implementation status of the 2013 SEA recommendations until 2020. Since then, due to inadequate funding for this activity and the lack of an earmarked budget for the Committee, it has remained only partially functional, compromising its capacity to undertake its coordination functions, including convening meetings and undertaking joint field monitoring in the Albertine Graben.

The SEA had also established a policy-level committee (comprising Permanent Secretaries and heads of institutions) and a field-level committee (comprising institutions that have field staff and the district local governments). However, neither of these committees are currently operational.

Uganda also has a **Multi-Sectoral Environmental Monitoring Committee for Oil and Gas**, led by NEMA, instituted under the Albertine Graben Environment Monitoring Plan (AGEMP) (NEMA 2022b) which brought together representatives from across MDAs, civil society organizations (CSOs), local government, oil companies and academia. The committee operates at 3 tiers – field based, technical and the steering executive tier – with members nominated officially by the heads of their respective institutions. This Committee was primarily funded through the Oil for Development country programme, supported by the Government of Norway. However, due to budget constraints, the monitoring committee has not convened for a joint inspection since 2018. During the time it was functional, the Committee was noted to be highly effective in strengthening coordination between the various multisectoral actors. MDAs have indicated strong interest in the revival of this Committee by securing regular funding for its activities through NEMA, including through the Environment Fund.

There are also other coordination mechanisms in the form technical working groups focused on specific issues such as the government technical working group on oil spill management, the technical working group on Murchison Falls Conservation program, and the joint technical working group on climate change in the oil and gas sector.

²² Update obtained from virtual and bilateral consultations with stakeholders held between May 2022 to June 2023.

The current national coordination mechanisms, however, have been unable to adequately coordinate activities among the MDAs. Coordination will be critically important as oil and gas production commences and expands with newly licensed blocks for exploration. This point was also noted by representatives of the CSOs consulted during the fact-finding mission.

At the project level, NEMA has striven to coordinate the review of quarterly reports by Project operators among relevant MDAs and to facilitate trainings for their staff. However, NEMA too is constrained by limited institutional capacity to fulfil all its functions effectively in a timebound manner. As the oil and gas sector expands, a well-coordinated government approach, especially for conducting compliance monitoring and review, is critically needed to maximize efficient use of both human and financial resource capacities.

The multi-stakeholder annual sectoral reporting process and the mid-term review under the **National Development Plan (NDP) II (2020/2021 – 2024/2025)** (National Planning Authority 2020) has the primary objective of planning and rationalizing the limited resources available to each sector. It could also provide an avenue for consolidating and coordinating multistakeholder inputs on environmental governance, although the NDP process does not focus solely on the oil and gas sector. Inputs are collected from MDAs, local governments, civil society organizations and private sector to gather all relevant activities that contribute towards intervention areas identified under each of the 18 Programmes included in the NDP. This process is used to identify any duplication of efforts and locate gap areas in implementation. Annual reports are presented to all stakeholders and made publicly accessible.²³

Box 5: About the Albertine Graben Oil and Gas Districts Association (AGODA 2016).

About the Albertine Graben Oil and Gas Districts Association (AGODA)

There have been inter-district informal collaborative mechanisms such as the AGODA which was established in 2015. Hoima, Masindi, Buliisa, Kiryandongo, Ntoroko, Nwoya, Nebbi, Kanungu, Rukungiri and Yumbe are members of this association. The primary objectives of AGODA are:

- To mainstream and integrate oil and gas in District Development Plans, budgets, and work plans of member districts.
- To support the development and utilization of local skills and expertise in member districts.
- To lobby and advocate for increased opportunities and reduced risks associated with oil and gas in the Albertine Graben.

AGODA has been involved in the African Development Bank funded East African Crude Oil Pipeline (EACOP) Districts' Micro, Small & Medium Enterprises (MSME) Business Linkage Project aimed at building the capacity of Ugandans for opportunities in the oil and gas sector. AGODA can therefore play a significant role in lobbying for additional funding to support the improved functioning of the District Natural Resource Management Councils, either in the form of additional operational budgets or in the form of new staff positions at District Departments for Environment and Natural Resources.

²³ Within the NDP II, the Sustainable Development of Petroleum Resources Programme (SDPR) seeks to enhance quality health, safety, security and environment vis-à-vis the oil and gas sector. The NDP acknowledges the risks posed to the environment by unsustainable extraction of petroleum mainly by exacerbating climate change and environmental degradation. The SDPR programme has a multi-sectoral programme working group that meets on quarterly basis, which could provide an entry point for coordination between MDAs involved in the oil and gas sector. Under the Natural Resources, Environment, Climate Change, Land and Water Management programme, the NDP sets goals for increasing overall compliance with water abstraction permits, wastewater discharge permits, and ESIA permits during spot checks. The annual reporting process on these goals provides an opportunity to also address environment and oil and gas issues. Coordination through the NDP processes would be strengthened by a functional inter-institutional coordination at Government level dedicated for environment and oil and gas issues (National Planning Authority 2015).

Way Forward and Recommendations

- 2.1 At a practical level to coordinate field site monitoring, the continuation of the Albertine Graben **Multi-Sectoral Environmental Monitoring Committee for Oil and Gas** under the AGEMP, and coordinated by NEMA, is an available mechanism that has been proven effective in the past. As a budgeting shortage has been universally noted, a designated source of finances by the lead agency (e.g., the Environment Fund at NEMA) needs to be provided for this Committee to remain functional. Formal multi-sectoral coordination and monitoring mechanisms with gender-balanced representation can be instrumental in ensuring that gender differentiated impacts from oil and gas are also regularly monitored.
- 2.2 Other coordinating mechanisms may be augmented and updated, e.g., the **Multi-Institutional SEA Technical Implementation Committee**, which is chaired by MEMD. To proceed, the terms of reference for this Committee must be updated and formalized, setting out the roles and responsibilities of the participating entities, as well as a designated annual funding source to enable it to continue implementation of the 2013 SEA recommendations and anticipate and address emerging issues in the oil and gas sector. Clear roles and responsibilities should be spelled out in relation to the Multi-Sectoral Environmental Monitoring Committee for Oil and Gas (discussed under Recommendation 2.1).

In order to provide the convening environmental authority for the continued implementation of the 2013 SEA recommendations, designating the MWE as Co-Chair is recommended. While the Ministry of Local Government is represented in the Committee, membership should also be expanded to include the District Natural Resources Officers from oil districts and district-level coordination mechanisms, such as the Albertine Graben Oil and Gas Districts Association (see **Box 5**)

- 2.3 Undertaking joint quarterly MDA field site inspections whenever possible would not only optimize the use of available resources but also help MDAs conduct comprehensive inspections that draw from their respective technical expertise. While NEMA already plays the coordinating role in sharing all quarterly reports submitted by operators to the relevant lead agencies, joint inspections would also help ensure that monitoring functions are undertaken as per the specific mandates of the relevant MDAs and avoid any possible overlap in compliance monitoring roles. In the Tilenga area, a field monitoring and reporting schedule should be well defined and agreed upon between the MDA and the operator. This would also facilitate joint monitoring and strengthen coordination between the key MDAs. Any delays to the schedule should be immediately communicated by the participating institution to the coordinating MDA for dissemination amongst relevant MDAs, along with an explanation as to the cause of the delay.

Again, it is noted that allocating a small but regular budget to support coordination amongst MDAs can result in greater cost-saving benefits over the long term by enabling MDAs to maximize limited resources and avoid duplication of efforts.

FINDING 3:

Waste management infrastructure in Uganda has improved since 2017 but monitoring of capacity needs is important, especially as new fields are developed.

Current Status

The Tilenga and Kingfisher ESIs provide the estimated waste volumes generated from their facilities per year with the management options for each stream, and the operators have developed their respective waste management plans against which their performance is being monitored. Uganda currently has four waste management facilities designated to handle petroleum waste: EnviroServ, Luwero Industries at Nakasangola and Ikamiro (landfill, waste treatment, and incinerator), and White Nile Consultants Ltd (being upgraded). There is no long-term storage at drilling sites, unless for the purpose of re-utilization. NEMA is the licensing authority for petroleum waste management, transport, and treatment licenses.

The ability to handle the expected volume of oil field wastes, particularly drilling muds, was identified as a major issue in 2017

The ability to handle the expected volume of oil field wastes, particularly drilling muds, was identified as a major issue in 2017. The National Petroleum Waste Management Regulations 2019, require the issuance of waste manifests at the point of generation, and as the waste is transferred for treatment/disposal, a copy is retained at the point of generation.²⁴ Once the waste is received, treated, and disposed of, a signed copy of the waste transfer note is returned to the point of generation to complete the cycle. In addition, a destruction certification is issued for hazardous waste.

All petroleum waste is supposed to be segregated at source and accompanied by a waste manifest where both the licensee and waste handlers are required to complete their respective sections of the form. Waste containing hazardous chemicals must also be accompanied by a material safety sheet. To ensure traceability, the waste manifest identifies the licensee, the site of origin of the petroleum waste, waste description, special handling instruction, location of storage, final treatment or disposal site, date of waste dispatch, expected date and time of arrival at the storage, final treatment, or disposal site, and provision for noting any discrepancy by the waste handler. The licensee maintains logs of storage of petroleum waste generated on-site. Waste storage, transport and treatment are inspected as part of the quarterly and ad hoc environment monitoring undertaken by the PAU and NEMA. These inspections are usually conducted separately.

A petroleum waste handler with a license to transport should develop a journey management plan that includes the designated routes, route specific speed limits, designated driving period, and health, safety, and environment requirements. The handlers are required to install electronic tracking systems for vehicles with access to real time vehicle tracking information provided to both NEMA and PAU.²⁵ Where the petroleum waste does not meet the description of the manifest or cannot be traced or has not reached its destination, the waste handler and licensee must immediately notify NEMA, PAU and any other relevant lead agency.²⁶

The annual reports submitted by the waste treatment facilities to NEMA include copies of signed waste manifests, type and amount of waste, emissions and discharges from petroleum waste management activity, health and safety statistics, and incident reports. In case of non-compliance, NEMA issues a non-compliance notice for corrective action. A follow-up reminder is also provided within the timeframe for the compliance notice. If the operator continues to be noncompliant, a stern directive is issued, followed by a penalty if necessary. It can also lead to suspension or revocation of license.²⁷

²⁴ Petroleum (Waste Management) Regulations 2019. Part V – Handling, Labelling and Storage of Petroleum Waste; National Environment (Waste Management) Regulations 2020. s 53.

²⁵ PAU evaluates this as part of its monitoring of waste management facilities/contractors.

²⁶ Petroleum (Waste Management) Regulations 2019. Part VI – Transportation, Treatment and Disposal of Petroleum Waste; National Environment (Waste Management) Regulations 2020. ss 57-61.

The site visit by UNEP to the EnviroServ facility in 2023 found improvements to the capability of the facility and ability to handle the hazardous waste from Tilenga

Both Kingfisher and Tilenga projects have submitted their waste management and waste management monitoring plans to NEMA. Waste is monitored monthly with quarterly reports submitted to PAU, NEMA and MWE (Directorate of Water Resources), which is followed by quarterly and ad-hoc site verification of reports undertaken by PAU and NEMA. The inspections are generally conducted independently, but joint site visits with NEMA are undertaken whenever there is a need. The information provided in the reports is verified by comparing submissions incoming records to on-site records in those of the generating facility.

The site visit by UNEP to the EnviroServ facility in 2023 found improvements to the capability of the facility and ability to handle the hazardous waste from Tilenga. It now handles synthetic and oil-based muds; fresh and unspent drilling muds will be stored on site at the drilling pads for reuse. EnviroServ has acquired specialized vehicles to be used for the transportation of wastes generated during production phase from Tilenga and will use third-party licensed contractors for waste transport. EnviroServ now has the capacity to handle 60,000 tons solid waste over 5 years.²⁸ The waste management system developed by EnviroServ includes routine and random inspection of incoming loads, visual inspection of all petroleum waste as it is delivered, inspection of suspicious loads and maintaining records of inspections.

The landfills at EnviroServ are lined with impervious plastic sheeting to prevent leakage or leaching of dangerous substances into soil or water, and have in place a geological barrier, a drainage layer for the leachate, and a leakage and leachate detection system. A landfill gas collection system has also been designed as part of the landfill closure and capping system. EnviroServ has 11 leachate monitoring wells which enable sampling for various chemical constituents in their on-site laboratory. Quarterly monitoring of air, water and soil quality is conducted in the surrounding area to establish the levels of contaminants arising from the landfill operations. Monitoring reports on this are submitted on a half yearly basis to NEMA.

EnviroServ currently produces monthly reports on noise, water, and air emissions, and separately conducts its own bi-yearly client audits. Operators undertake general environmental monitoring monthly and submit quarterly reports of their environmental monitoring plan. EnviroServ and the operators also develop their annual environmental audit reports, which is also subject to independent and joint inspections by NEMA and PAU.



Landfill sites at EnviroServ Hoima March 2023.
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²⁷ Petroleum (Waste Management) Regulations 2019. Part VIII – Records, Reports and Notifications; National Environment (Waste Management) Regulations 2020. ss 100-103.

²⁸ Data obtained by UNEP during on-site consultations with EnviroServ on 28 March 2023.



Trucks for transporting waste at EnviroServe. A large fleet of tipper trucks or dump trucks is required to transport the large volumes of solid and semi-solid wastes generated by oil and gas operations 2017.
© UNEP/Marisol Estrella

CNOOC has contracted a separate waste treatment facility, managed by Luwero Industries Limited, for its production phase which was not visited during this CNA update process. PAU has, however, confirmed that the Luwero facility at Ikamiro comprises of an engineered landfill, thermal desorption unit for the oil-based cuttings and a wastewater treatment plant.

NEMA is also the designated authority under the National Environment Act 2019 (NEA 2019) who grants the license to deal in hazardous chemicals or products containing hazardous chemicals.²⁹ It is mandated to establish the criteria for classification of hazardous chemicals in accordance with their toxicity and the hazards they present to human health and the environment. The NEA 2019 envisions that the enactment of regulations for the management of hazardous chemicals will be based on this classification criteria. While prohibited and restricted chemicals are listed under Schedule 8 of the NEA 2019, Uganda does not yet have a regulation in force for hazardous chemicals management. The National Environment (Management of Hazardous Chemicals and Products Containing Hazardous Chemicals) Regulations are still in their draft form. These regulations will establish a publicly accessible national registry of hazardous chemicals.

In 2019, UNEP undertook a Special Programme on Institutional Strengthening for Chemicals and Waste Management to strengthen the country's institutional capacity to adequately manage an increased amount of chemicals and waste (UNEP 2023), under which Uganda's National Chemicals profile was updated. The project developed the Uganda National Chemicals and Waste Database which provides information on chemicals across their entire lifecycle. The database is integrated under Uganda Revenue Authority (URA) and under MGLSD, but only partially. For the database to be fully operational, the regulations on hazardous chemicals management need to be first finalized. As of December 2022, the multi-sectoral technical committee on sound management of chemicals, which was established under this Special Programme, has started their activity and their full operation is expected in the near future.

²⁹ National Environment Act 2019. ss 21, 81. Pollution licenses may be issued by a Technical Committee on Control of Pollution, by the Governing Board of NEMA. The Committee can revoke the licenses in writing in the event of contravention of applicable law by the licensee, non-compliance with the conditions, or in environmental or public interest. In the event of pollution contrary to the licensing conditions, the polluter is required to stop further pollution and minimize damage, give notice to NEMA and the relevant lead agency, take steps to mitigate any damage, and take steps to clean-up and restore as near as possible to original state as well as pay compensation for the damage caused. In the event of noncompliance, NEMA can implement the measures at the cost of the pollutant and revoke their license. The polluter is strictly liable for any damage caused to human health and the environment.

Key Issues

(i) Hazardous chemicals management

In the absence of specific regulations governing hazardous chemicals management, the CoA conditions stipulate that the licensee must comply with the applicable national laws and the Globally Harmonized System (GHS) for classification and labelling of chemicals in the transportation, storage, handling and disposal of chemicals, and that they should maintain an up-to date list of chemicals used, their Safety Data Sheets and Risk Assessment Report; and avail this information to NEMA upon request. The Kingfisher and Tilenga projects have completed supporting documentation in conformance with the CoA requirements.

International companies must also adhere to international standards on hazardous chemicals management. The Kingfisher project's waste management plan states that chemical additives must be carefully selected in terms of dose concentration, toxicity, biodegradability, bioavailability, and bioaccumulation potential as per CNOOC's Waste Management Specification and IOGP Guidelines for waste management with special focus on areas with limited infrastructure (IOGP 2008). The Tilenga project's chemicals management plan follows two methods of hazard assessment the Chemical Hazard and Risk Management (CHARM) and Non-CHARM criteria of evaluation.³⁰ It also recognizes the Oslo Paris Commission (OSPAR) List of Substances and Preparations Used and Discharged Offshore which are considered to Pose Little or No Risk to the Environment (PLONOR) and IOGP Guidelines (OSPAR Commission 2023). Mitigation measures have also been put in place to address accidental chemical spills under the respective waste management plans of oil operators.

(ii) Waste and hazardous waste management in drilling and development phases

The ability to handle the expected volume of oil field wastes, particularly drilling muds, was identified as a major issue in 2017. As noted above, the quality and capacity of available treatment centres has substantially improved. The estimated quantities of hazardous waste generated through the production stage from Kingfisher and Tilenga operations is shown below.

Table 1: Summary of estimated quantities of hazardous wastes through to production from the Kingfisher and Tilenga oil fields.

(Source: CNOOC Uganda 2018; TotalEnergies 2020b)

Category	Item	Kingfisher	Tilenga	Units
Solids	Drill Cuttings	389,334	119,000	tonnes total
	Contaminated Soil	Not provided	31	tonnes total
	Treated Wood	Not provided	23,208	Tonnes annual
	Bitumen	Not provided	1,751	Tonnes annual
Liquids	Drilling Fluids	104,076	38,000	tonnes total
	Used Cooking Oil	Not provided	151	Tonnes annual
	Lab Drainage	Not provided	10	Tonnes annual
	Used Lube Oil	Not provided	10	Tonnes annual
	Oil Rags/Sorbents	Not provided	71	Tonnes annual
	Oily Water/Tank Slops	Not provided	14400	Tonnes drilling period
Other	Batteries	Not provided	7	Tonnes annual
	Light Bulbs	Not provided	4	Tonnes annual
	Sanitary Waste	Not provided	0.5	Tonnes annual
	Medical waste	Not provided	68	Tonnes annual
	Cables	Not provided	10	Tonnes annual

³⁰ The CHARM Model assesses the Hazard Quotient by comparing the predicted exposure concentration to the no effect concentration (PEC: NEC), categorizing it into one of six categories, with "GOLD" representing the least hazardous category. Chemicals that are not suited to CHARM modeling are classified into categories (A to E) based on their toxicity assessment, biodegradation, and bioaccumulation potential, with Category E signifying the least harmful classification (TotalEnergies 2020a).

While liquids will be treated by separation and reuse, and/or high-temperature incineration, it is the quantity of solid materials (particularly drill cuttings) that can rapidly fill available space in a (properly lined and monitored) landfill. The EnviroServ facility currently, contracted for Tilenga wastes, reported a capacity to handle 60,000 tons of solids within the next five years, providing sufficient time to expand the facility as needed, or acquire additional land for storage. The capacities of the other three available remediation facilities were not verified by UNEP during its field mission; however, it seems likely that exploration drilling activities in newly leased areas will increase the demand for proper treatment and the need for PAU and NEMA to ensure that sufficient capacity is available. UNEP did not receive information on the expected volumes of waste, as the newly leased oil fields are explored and potentially developed.

The oil companies maintain responsibility for their generated wastes. However, currently there is little to no proper treatment of wastes from municipalities and villages in the oil districts. The influx of people into these areas has already stressed existing services provided by the districts. Additional support for waste collection and proper treatment should also be considered before the system gets worse.

Way Forward and Recommendations

- 3.1 While there have been significant improvements related to waste management since 2017, in moving forward, it will be critical to ensure that NEMA, PAU, MWE and the local government bodies have clear and systematic waste management oversight systems in place to undertake review and triangulation of all monitoring reports on waste streams generated, transported, and treated for disposal. Specific plans, procedures, and monitoring requirements in relation to hazardous chemicals and waste management as specified in operator ESIA's and their CoA should be verified as completed by the relevant MDA.

In this regard, ensuring regular compliance audits focused on hazardous chemicals and waste management and the necessary budgets allocation to support regulatory activities and site inspections by NEMA and PAU will remain critical, especially in light of the development and production phases in the sector and opening up of new licensed blocks.



There is need to have a clear understanding of expected waste types and volumes as Uganda moves into field development and production stages

- 3.2 There is need to have a clear understanding of expected waste types and volumes as Uganda moves into field development and production stages and as new exploration sites are proposed. NEMA and PAU should revisit the estimates provided for waste handling by the treatment facilities to ensure sufficient capacity to meet the new demands that will be encountered. If new areas for exploration and production are being opened, there will need to be a concurrent strengthening of the country's hazardous waste management infrastructure. The Government needs to be able to anticipate future needs for waste management and inform the private sector so that sustainable business models for hazardous waste facilities can be developed.
- 3.3 District Governments in oil districts are encouraged to seek expertise and funding for the proper design of municipal waste management systems, in response to increased usage caused by the substantial influx of new residents.
- 3.4 The delayed enactment of regulatory guidance at the national level limits conformity of symbology and protection advisories across all industries using hazardous chemicals in their processes. Upon enacted, it would be critical for NEMA to ensure and monitor compliance for enforcement of the regulatory standards.³¹

³¹ Regulations should be developed in alignment with the Globally Harmonized System of Classification and Labelling of Chemical (GHS). Since endorsement by the United Nations in 2003, over sixty countries have begun to implement it, partly or fully.

Principal elements of a strong regulation on hazardous chemicals management will include:

- Hazard classification: Provides specific criteria for classification of health and physical hazards, as well as classification of mixtures.
- Labels: Chemical manufacturers and importers are required to provide a label that includes a harmonized signal word, pictogram, and hazard statement for each hazard class and category. Precautionary statements must also be provided.
- Safety Data Sheets: Utilizes a specified 16-section format as per international best practice. Information and training: Employers are required to train workers on the new labels, elements, and safety data sheet format to facilitate recognition and understanding. Regulations should also include requirements to apply PLONOR criteria as much as possible.

FINDING 4:

Anticipating future water demands and produced water disposal is needed for sustainable water resource management.

Current Status

The Directorate of Water Resources Management (DWRM) at MWE is the permitting authority for wastewater discharge permit, groundwater abstraction permit and surface water abstraction permit under the Water Act Cap 152 and the Water (Waste Discharge) Regulations 1998.

In terms of water usage in the oil and gas sector, water for the Tilenga Development will be abstracted from ground water bore holes and from a pumping station in Lake Albert for transport to the Central Processing Facility (CPF) in Ngwedo Subcounty, Buliisa District. For Kingfisher, the water will be abstracted from a point near the Lake Albert shoreline, not far from its CPF (CNOOC Uganda 2017). Water will also be abstracted for road construction and dust control. Unlike oil companies, construction companies in Uganda generally share water wells and springs with communities since they do not necessarily have gazetted abstraction points (MWE 2022).

All wastewater discharge to the environment should also comply with the National Environment (Standards for Discharge of Effluent into Water and Land) Regulations, 2020. Environmental inspectors designated under the National Environmental Act are empowered to enter and take samples for wastewater analysis at any reasonable time. The MWE maintains a register of all waste discharge permits that have been granted. Previously, the treated effluent did not meet the permissible limits for some of the parameters. To address this, the licensees were mandated to upgrade relevant systems to ensure the wastewater is treated to meet with the explicit discharge standards listed in the CoAs. Accidental discharges are required to be reported within 24 hours of the discharge.

While there are several laws and regulations governing wastewater discharge, there are no specific rules on produced water disposal. Operators are, however, prohibited under their Certificate of Approval (CoA) conditions from releasing produced water and hydrostatic test water to the environment, thereby ensuring that it does not contaminate surface waters and usable aquifers.

The CoAs also require developers to separately obtain and comply with the conditions of the water abstraction permit as prescribed by the Directorate of Water Resources Management. The CoA is granted by NEMA also on the basis of the Water Management Plans and the Produced Water Contingency Management Plan submitted by the operators. As per the management plans submitted by the operators, processed water management is monitored continuously to prevent spillages into the environment. It also sets criteria for discharged produced water and hydrotest water that must be always met.³² A study was commenced in 2021 by MWE (in collaboration with TotalEnergies) to assess the potential impacts of activities on groundwater in the Albertine Graben region.

³² PAU does not foresee any challenge related to produced water volumes and considers the underground formations as sufficient for re-injection.

Key Issues

Based on discussions with PAU and operators, Uganda is following international best practice standards for produced water disposal, with a focus on treatment and re-injection.

The peak water demand for upstream oil field developments within the Albertine Graben is estimated to be about 45,000m³/d in 2031

With regards to water needs, in 2022, MWE carried out a report on “*Threats, Pressures and Impacts Report from the Assessment of the Potential Impacts of Oil and Gas Development and Associated Activities on Water Resources*”. In this report, MWE identified excessive ground water abstraction as a threat due to limited controls and growing pressure on ground water in Buliisa, Hoima and Kikuube districts. While addressing future water use, the report also noted that the Physical Development Plan for the crude oil refinery in Hoima does not address water resource management strategies, including water demand, supply, and wastewater management, which should be addressed once EIAs for the refinery is completed. The peak water demand for upstream oil field developments within the Albertine Graben is estimated to be about 45,000 m³/d in 2031. The 2022 report also estimates the water demand for all other potential oil fields and surmises that in a low production scenario the maximum water demand is the same as above, whereas for high production with slow development demand, water demand would reach about 80,000 m³/d in 2045, and for both high production and fast development about 105,000 m³/d in 2041.³³

UNEP did not receive further verified information on future water abstraction needs in the upstream oil and gas sector. Nonetheless, continuous monitoring and assessment of water abstraction needs will be important as the sector moves into production phases and new fields are developed.

Way Forward and Recommendations

- 4.1. MWE should ensure verification of water abstraction permits for compliance to avoid unauthorized abstraction.
- 4.2. In light of potential climate change effects and the increased water needs in the petroleum sector as it moves into production and new exploration, the relevant Government entities, namely MWE, NEMA and PAU will need to further develop water abstraction estimates/projections from Lake Albert, other water bodies as well as from ground water resources. Such estimates/projections should consider all aspects of water resource management, including other potentially competing domestic or sectoral water demands (driven in part by growing population), as well as transboundary considerations with neighbouring countries within the Nile Basin. District governments and local communities should also be involved in discussions related to water needs and water abstraction requirements of the oil and gas sector.
- 4.3. The importance of establishing national regulations for produced water disposal as already mentioned under Finding 1.
- 4.4. The ongoing assessment of potential impacts on groundwater in the Albertine Graben should be finalized by MWE.

³³ The estimate volume of produced water required for the entire oil production at the Tilenga CPF is approximately 225,000 barrels of water per day. And according to the Kingfisher ESIA, the Peak Project water demand is 355 m³/h (about 8,520 m³/d or 100 l/s) being demand for injection water make up 301 m³/h, domestic water 6 m³/h and utility/unaccounted water 48 m³/h. This water is planned to be abstracted from a point near the shores of Lake Albert, not far from the CPF as shown in figure below. For the planned refinery, the peak operational demand will be about 9,600 m³/d and the water back to the Albert Lake is estimated at around 7,680 m³/d (MWE 2022).

FINDING 5:

Oil and gas production can occur with near-zero methane emissions with adequate design and mitigating measures taken from the start. Regulating and monitoring GHG emissions should be prioritized, especially in the production phase.

Current Status

Uganda's vision 2040 aspires to achieve a green economy, low in carbon development, climate change resilience, sustainable development, and poverty eradication. This involves developing national capacity to reduce greenhouse gas emissions and to tackle climate change.

The Government of Uganda revised its Nationally Determined Contribution (NDC) and developed an implementation and resource mobilization plan in 2022. The revised NDCs targets 24.7% emissions reduction by 2030 (United Nations 2023). However, the revised NDCs are yet to factor in GHG emissions from the oil and gas sector that is expected once Uganda enters the production phase in 2025.

In the absence of National Air Quality Standards, the emissions limits prescribed under Certificates of Approval provided to petroleum operators in Uganda is based on the East African Standards. The operators have both an Air Quality Management Plan and a Greenhouse Gas Management Plan against which emissions are to be monitored on a monthly basis.

Uganda currently does not have a clear permitting regime in place for gas flaring and venting. The National Oil and Gas Policy (NOGP) 2008 as well as the CoAs prohibit venting and restricts the flaring of natural gas. The Policy also notes the need for necessary regulatory framework regarding venting and flaring to avoid wastage of the resources and safeguard the environment. The NOGP is in the process of being revised and updated into a National Petroleum Policy to address methane emissions arising from the oil and gas industry.

The Petroleum Act 2013, however, supports gas utilization and prohibits flaring and venting of gases beyond the normal operational safety quantities without Ministerial approval.³⁴ Except in cases of emergency (e.g., an oil/gas "kick" caused by pressures from the wellbore),³⁵ PAU's written consent is mandatory prior to flaring and venting under normal operating conditions. A technical report is also required detailing the nature and circumstances that necessitated the emergency flaring or venting. However, the law does not explicitly mention measurement of such quantities or set standards for flare efficiency. The National Environment Act 2019 obligates the polluter to take measures to minimize pollution caused by venting or flaring when allowed by law,³⁶ and notes that any emergency venting and flaring should be in compliance with air quality standards established under the National Environment Act 2019.³⁷

³⁴ Petroleum (Exploration, Development and Production) Act 2013. s 100.

³⁵ Petroleum (Refining, Conversion, Transmission and Midstream Storage) Act 2013. ss 26, 38.

³⁶ National Environment Act 2019. ss 78, 103.

³⁷ In the absence of National Air Quality Standards, Uganda follows East Africa air quality standards, which are referenced in the Certificates of Approvals (CoA) granted by NEMA to the operators.

The Petroleum (Exploration, Development and Production) Regulations 2016 also contains mandatory stipulations regarding the minimization of hazardous emissions to air and discharges to the environment in the operator's field development plan. The operator is also required to provide monthly production statements to PAU which includes the quantity of associated natural gas and non-associated natural gas produced and saved. The Regulations include leak detection and repair as well as monitoring and reporting requirements for leakages. The operators are required to submit a report to the Authorities within seven days, showing measures taken to rectify the leak and maintain the survey log for at least 2 years after inspection. PAU can increase frequency of inspections when excessive leaks are found during inspections.³⁸

The Tilenga Project has a fugitive emissions measurement program and a leak detection system being put in place for its production phase. The Kingfisher Project has also included fugitive emissions as a part of its Air Quality Management Plan with daily monitoring.

With regards to air emissions, presently there is no on-site emissions plan specifically developed yet for project sites, but operators are installing equipment to continuously monitor air quality, looking at combustion from fuel sources and emissions from refrigerants/cooling equipment. They have, however, requested Government approval to procure on-site equipment for continuous air quality monitoring on site. The Central Processing Facility for Tilenga is in the process of installing a leak detection system for monitoring and controlling fugitive emissions.

Key Issues

Uganda does not have a full national greenhouse gases inventory. The lack of baseline data for the oil and gas sector was noted by PAU as being a deterrent in setting clear mitigation targets. To address this gap, UNEP's International Methane Emissions Observatory (IMEO) is working with stakeholders in Uganda to conduct a methane emissions baseline, which would contribute to an empirically verified component to an overall GHG emissions baseline. The baseline study would measure methane emissions before and after the start of oil and gas production and provide an important reference to how emissions have changed over time. This could also then inform the next update to Uganda NDCs. This information could also be used in the development of district level climate change action plans mandated under the NEA 2019.

PAU has been charged with consolidating and reporting the sector's GHG emissions reduction targets and net emissions, for the national GHG inventory which is being coordinated by the Climate Change Department of the Ministry of Water and Environment.

Methane emissions from oil production are usually greater in upstream facilities. Therefore, an emphasis on monitoring and regulating such emissions is critical. Once production starts in the country, further capacity strengthening at PAU and NEMA will be needed on GHG measurement and calculations. Increased monitoring of methane emissions will also necessitate a sufficiently equipped national data management system that can handle the amount of data received from operators on a daily basis. It is completely feasible today that oil and gas production could take place with near-zero methane emissions (intensity below 0.20%) (Environmental Defense Fund 2018). Taking a proactive approach to methane emissions reduction in the field development and production phases is much simpler and cheaper when done from the start.

³⁸ Petroleum (Exploration, Development and Production) ([Health, Safety and Environment] Regulations 2016. ss 88-100.

Way Forward and Recommendations

- 5.1. Methane emission control and measurements need to be undertaken in the petroleum sector as per Uganda's climate commitments and global commitments by operators. Control measures include monthly or quarterly leak detection and repair (LDAR) inspection at all sites (wells, pump stations, processing plants, etc.) and requiring a range of measures that can be taken to minimize methane emissions from the sector, for instance: reduced emissions/green completions and workovers, banning the use of venting-by-design equipment, installing zero-emitting equipment for pneumatic controllers and pumps, as well as analysing the possibility of a trade and fee system for vented and flared gas.³⁹ Clear verification procedures and designated institutions or third parties should be considered for methane measurements and reports. As noted above, international oil operators are starting to install continuous air quality monitoring equipment which is also being used to help establish emissions baselines.
- 5.2. As the national GHG inventory work gets finalized, there will be need to continually improve the data compilation processes, and in turn improve the inventory reports used in the NDCs. Trainings and awareness raising for the MDA personnel in the GHG inventory teams on GHG/methane emissions measuring, monitoring, and reporting from the oil sector will be essential in meeting the emissions targets from the industry as well as fulfilling Uganda's global commitments on climate change. Furthermore, EITI countries, such as Uganda, will also now be required to report data on GHG under the new 2023 EITI Standard (Robinson 2023).
- 5.3. The Government could encourage or even require all operators to join the Oil and Gas Methane Partnership (OGMP) 2.0. The reported data by operators through OGMP 2.0 would then provide confidence on the management of methane emissions. Uganda could also take advantage of the wealth of existing technical information on methane management in the oil and gas sector from the OGMP 2.0. Most major international oil companies (including TotalEnergies) are already members. TotalEnergies has committed to working with partners to improve methane management across all operations, which should include their operations in Uganda.
- 5.4. Uganda may also consider joining the Global Methane Pledge (GMP), through which signatories commit to a collective global target of 30% methane reduction by 2030. UNEP's International Methane Emissions Observatory (IMEO) is currently working with the Government to organize a baseline measurement study to help understand and ultimately reduce emissions. Such baseline in conjunction with follow-up measurements after oil production starts could become a benchmark for other new oil-producing countries around the world.

³⁹ Email communication from Mohammed Aminu, Clean Air Taskforce (CATF) to Devashree Pillai, UNEP, dated 17 March 2023, providing CATF's comments to the Ministry of Energy and Mineral Development on the draft Ugandan National Petroleum Policy.

FINDING 6:

Oil spill and emergency response preparedness need to be strengthened and include transboundary considerations.

Current Status

The National Environment Act 2019 (NEA 2019), the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations 2020, and the National Oil Spill Contingency Plan 2020 (NOSCP) are the key legal instruments governing acute pollution from the oil and gas industry. The NEA 2019 defines 'acute pollution' as 'significant pollution that occurs suddenly and demands immediate response to protect human health and environment'.⁴⁰ According to NEA 2019, NEMA is mandated to coordinate lead agencies in their preparedness and response to environmental emergencies or disasters. OPM is the lead operational coordinator for oil spill preparedness and response, while PAU is the designated competent national authority for the implementation of the NOSCP.⁴¹ NEMA is responsible for all the environmental regulatory aspects of oil spill preparedness and response.

Prepared by Office of the Prime Minister, NEMA and PAU, with support from the Norwegian Coastal Administration (NCA), the National Oil Spill Contingency Plan (NOSCP) 2020 applies international best practice and provides for three levels of response:

- **Tier 1** – small, locally based spills where the operating entity, including those from Project operators and licensees, will provide a rapid response with appropriate equipment,
- **Tier 2** – small to medium sized spills, where the licensee or operator provides resources, but which may be inadequate, under which circumstances, a joint response including support from other operators, government agencies and international resources may be required, and
- **Tier 3** – large spills of national or international significance beyond the capability of the licensee or operator and the Uganda Government, in which case national resources will be mobilized as required to adequately respond and international resources will be requested by Government and industry.⁴²

Whereas Tier 1 spills lie solely within the organizational responsibility of the operator, under specific circumstances for Tier 2 spills, the NOSCP states that "Government may consider taking over response operations in accordance with the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020. Nevertheless, even when the Government takes over response operations, the licensee, operator, or other entity responsible for the oil spill remains liable for the consequences and costs related to incident response. The responsible party must continue with their response efforts under the National Incident Command structure of Government, under the Office of the Prime Minister, Department of Relief, Disaster Preparedness and Management.

Operators of the Kingfisher and Tilenga Projects have provided the basic contents of their spill response plans in their respective ESIA's but finalized locally based plans for Tier 1 and Tier 2 spills have not yet been verified by UNEP.⁴³ The Norwegian Coastal Administration (NCA) who had reviewed the Tilenga plan noted that it met with international best practice standards.

⁴⁰ National Environment Act 2019. s 2.

⁴¹ National Environment Act 2019. s 93(3).

⁴² National Oil Spill Contingency Plan 2020 (NOSCP), developed by NEMA, PAU and the OPM under section 93, National Environment Act 2019 and guided by the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020.

⁴³ PAU has confirmed that the oil spill contingency plans for both the Tilenga and the Kingfisher projects are complete.



Aerial view of Kingfisher development area on Lake Albert in 2017.
© UNEP/Marisol Estrella

Oil operators are also required to hold active membership with suitable Tier 3 oil spill equipment service providers that can mobilize spill equipment into Uganda within the shortest time possible. CNOOC and TotalEnergies are members with Tier 3 service provider Oil Spill Response Limited and have their own internal international response groups (e.g., Fast Oil Spill Team (FOST) for TotalEnergies and Crisis Management Team (CMT) for CNOOC). TotalEnergies also lists equipment and other service providers in their Procedure: OSCP Volume 1 – Operational Support 6, Equipment Inventory.

Presently, oil fields are located adjacent or in proximity to Lake Albert which is part of the Nile River Basin. The Nile River exits Lake Albert to the north, with the DRC, South Sudan, Sudan, and Egypt as its downstream riparian countries. Uganda is a member of the Nile Basin Initiative⁴⁴ which was established in 1999 to achieve sustainable socio-economic development through equitable utilization and benefit from the common Nile Basin water resources (Nile Basin Initiative 2001). However, this Initiative does not address oil spills.

Uganda is also signatory to the Nile River Basin Cooperative Basin Agreement that includes an obligation to not cause significant harm to other States of the Nile River Basin. While the Agreement has not yet come into force, it does place the duty on a Basin State to notify potentially affected states of any emergency that causes, or poses an imminent threat of causing, serious harm to Nile Basin States or other States resulting from human conduct, such as industrial accidents. The Agreement also makes provision for the development of a joint contingency plan for responding to emergencies, when necessary, in cooperation with the Basin States, other affected States and competent international organizations. Upon entry in force of the Agreement, the Nile Basin Commission established under it, shall succeed to all rights, obligations, and assets of the Nile Basin Initiative (NBI).⁴⁵ It may be concluded that, once the Agreement comes into force, Uganda would then have an international obligation to develop a Nile Basin Joint Contingency Plan.

As oil development activities proceed along the Ugandan side of the Lake Albert, there exists a possibility that accidental spills could enter the lake and potentially reach DRC waters and shorelines. The Ministry of Foreign Affairs (MFA) of Uganda is in the process of negotiating transboundary agreements with the DRC on matters related to security, tourism, migration, and environment (including deforestation, water, and fisheries). However, there is currently no specialized bilateral agreement between the two countries on transboundary oil spill response.

⁴⁴ The Nile Basin Initiative is composed of Burundi, Democratic Republic of the Congo, Egypt, Ethiopia, Kenya, Rwanda, Sudan, United Republic of Tanzania, and Uganda. Eritrea and South Sudan participate as observers.

⁴⁵ The Nile Basin Cooperative Framework Agreement, which has been ratified by Ethiopia, Rwanda, United Republic of Tanzania, and Uganda (in 2019), will enter into force 60 days after six countries have ratified or acceded to the document and deposited with the African Union.

The Governments of Uganda and the United Republic of Tanzania (Tanzania) are cooperating with oil operators to develop the East Africa Crude Oil Pipeline (EACOP), which will flow southwards and exit towards the port of Tanga, Tanzania. Within the EACOP project, MEMD and its Tanzanian counterparts are coordinating at the technical levels on oil spill contingency planning, but there is no bilateral agreement established for transboundary oil spill response. As of March 2023, the EACOP has put out a tender for developing the Oil Spill Preparedness and Response Management Services to the Project (EACOP 2023c). The preparation of Oil Spill Contingency Plans (OSCPs) for construction and operations phases of EACOP (including oil spill risk assessment and oil spill modelling, for both terrestrial and marine environments) are still pending, as are the plans for the proposed refinery.

Key Issues

(i) Building sufficient spill response capacities

Following the official adoption of the NOSCP in 2022, it is critical for the Government lead agencies (OPM, PAU and NEMA) to undertake regular trainings and practical exercises to implement the NOSCP. During UNEP consultations, some of the key stakeholders were not familiar with the NOSCP and their role under the Incident Command System structure. Spill response exercises, desk-top and field deployments, are a primary method to acquaint national and local Government and industry stakeholders with the NOSCP and the roles of each entity within the plan. While industry is carrying out substantial efforts on oil spill preparedness, the NOSCP needs to be exercised to reach an appropriate stage of readiness, and to include other areas in the country outside the Albertine Graben with high spill risk (e.g., Lake Victoria). However, there is very limited funding to conduct response exercises for Tier 2 spill scenarios.

As per the equipment inventory conducted by NCA in February 2023, the basic equipment needed to respond to oil spills at Tier 2 level is insufficient (see **Box 6**)

Box 6: Summary of equipment needed to respond to Tier 2 incidents as recommended by the NCA.

Summary of equipment needed to respond to Tier 2 incidents as recommended by the NCA.

- **Skimmer** for handling the very waxy and heavy oil.
- **Additional oil booms** suited for use in Lake Albert.
- **Oil booms** suited for use in Victoria Nile (White Nile) River.
- **Beach sealing booms.**
- **Onshore equipment for cleaning** beaches and inland.
- **Equipment for surveillance**, ex. 4W-offroad vehicle, motorcycles, drones, helicopter, or plane.
- **Suitable response vessels** for Lake Albert and the Nile River including oil recovery and boom handling.

To support efforts in pooling together and maximizing resources for oil spill response, Uganda may consider establishing public-private partnerships which could address equipment needs and response capacity shortfalls. **Box 7** describes such a partnership from Kenya.

Oil spill scenarios modelling in the Albertine Graben region should work towards country-wide coverage. PAU is in the process of developing an oil spill modelling programme that will help develop an oil spill sensitivity atlas to aid in oil spill preparedness and response. Both the Kingfisher and Tilenga Projects have submitted blowout contingency plans and have modelled resultant flow patterns from the very large quantities of oil potentially released (~250,000 m³).⁴⁶ Releases from both projects may reach the waters of Lake Albert and the Nile River within a few days and as little as 12 hours from the Gunya wells in Tilenga. However, material received to date do not provide the detailed Tactical Response Plans (location, equipment required and response time) required to intercept the flow of oil before it reaches these waters. Using worst-case scenarios in table-top and field deployment exercises will serve to aid the development of the required Tactical Response Plans, which should also take into account environmental sensitivities.

Oil from the Albertine Graben is categorized as medium-to-heavy (specific gravity near the density of water) with a high wax content causing a pour point of 400°C; hence, it solidifies at normal outside temperatures (PAU 2023f). These characteristics have great importance in oil spill response, and particularly for in-water response, should spilled oil reach Lake Albert. Uganda has prohibited use of dispersants in its freshwaters and the NOSCP advises against the use of other non-mechanical methods, such as in-situ burning and bioremediation.

Box 7: Oil Spill Mutual Aid Group, Kenya (OSMAG 2023).

Oil Spill Mutual Aid Group, Kenya

The OSMAG Society was set up in Kenya, in June 1989, initially as an oil industry partnership called the National Oil Pollution Committee (NOPC). It was later expanded to include Government entities including Ministry of Energy, Ministry of Transport and Communication, Ministry of Tourism and Wildlife, Ministry of Environment and Natural Resources and Corporations. It is now a public-private sector entity that pools resources to have joint equipment for oil spill response. OSMAG has one permanent technical staff that is seconded to the organisation from the Government and has an operational arm, the oil spill response action team (OSRAT). Joint training events and drill are conducted for OSRAT members, including response equipment inspections. The organisation was formed to create joint response capability in Kenyan Coastal Waters, and to:

- Provide mechanism for pooling resources and reimbursement of response costs (e.g., equipment, personnel).
- Acquire, compile, and disseminate current information pertaining to oil spills to the members.
- Cooperate with Governmental efforts concerned with spill control and maintain links with entities having similar objectives or activities.
- Promote technical discussion among the members and provide others with advice or recommendations for such discussion.
- Generally, to identify, co-ordinate and implement steps necessary for the achievement of the prevention, control, containment, and response to oil spills in Kenya coastal territory.

⁴⁶ Petroleum (Exploration, Development and Production) (Health, Safety and Environment) Regulations 2016. ss 60-65.

(ii) Strengthening multi-hazard emergency response planning, especially at the district levels

Both a NOSCP for oil spills and a national emergency response plan which recognize multiple hazards and multi-scenarios are necessary to bring the full capabilities of Government to the required response effort. Such hazards may include large fires, gas leaks, floods, riots, mass casualties, earthquakes, etc. which can take place alongside and exacerbate oil spills and other acute pollution risks (e.g., chemical spills) associated with the oil and gas sector. The NOSCP system and national disaster management systems must be closely linked with each other and have country wide coverage.

There are efforts at the district level, as first responder to incidents, to develop their own locally based multi-hazard response plan, for example associated with local fires, road or facility accidents including transport of injured to nearest medical facility, etc. Of the interviewed oil districts, Hoima District has integrated its oil spill preparedness and response plan into the district level emergency plans. Buliisa and Nwoya are yet to develop their oil spill preparedness and response plans. Norway, in collaboration with the International Maritime Organization (IMO), has drafted guidelines on developing local oil spill contingency plans which may be used as a guidance document by districts to develop their localized plans (ITOPF 2014). These guidelines were developed taking into account countries without a coastline, such as Uganda.

(iii) Transboundary considerations in oil spill contingency planning

Oil entering Lake Albert potentially could trigger a Tier 3 response of international significance. The MOFA would take the lead role in notifying DRC officials, so it is advantageous to have the notification sequence pre-defined in a transboundary agreement between the neighbouring countries. For instance, there may be a need to transport spill response equipment across the DRC border to aid a response from the DRC side of Lake Albert. Having a pre-defined agreement enabling the rapid cross-border transport of equipment is critical in a response effort.

The development of the East Africa Crude Oil Pipeline (EACOP) from Uganda to the United Republic of Tanzania (Tanzania) is also another area requiring a transboundary agreement. The establishment of an agreement with the DRC could serve as a model for an agreement with Tanzania, or vice versa. Spill response exercises involving a transboundary incident, including MOFA representatives and other relevant MDAs, local governments, and industry, would enhance collective understanding of these issues.

Way Forward and Recommendations

- 6.1 Oil spill equipment stockpiled by field operators needs to be deployed during response exercises to test capabilities for operating in Lake Albert and associated Nile River systems. Similarly, equipment quantity and capacity, including time required to bring in additional equipment from international sources, should be verified against possible discharge scenarios, particularly related to well blowouts.
- 6.2 Spill training and response exercises should be co-sponsored by both industry and MDAs as a method to familiarize all parties as to their roles and responsibilities within the NOSCP. Initially, response exercises, which may include desk-top and field exercises, on a quarterly basis are recommended, which later can be extended to every six months once familiarity with both the NOSCP and local spill response plans is acquired. Testing of Tier 1, 2 and 3 response levels should be within the exercises undertaken.



Spill training and response exercises should be co-sponsored by both industry and MDAs

- 6.3 A formal transboundary agreement needs to be established between the DRC and Uganda on oil spill preparedness and response (OSPR). Components of the agreement should address the communications pathway for notification of a potential transboundary oil spill, ability to overfly the waters and shoreline of the DRC as needed to confirm presence of oil originating in Uganda, equipment availability in both countries, methods to rapidly move spill-response equipment across the border free of immigration delays, joint research to be undertaken to determine effects on natural resources and impacts to local communities living along the lake, and a means to share results of computer-based modelling indicating the potential range of spill movement under varying wind conditions and spill sizes. Such an agreement should also include oil spill surveillance and monitoring, request for support, and joint response operations and annual exercises between the two countries.

The agreement with DRC could likely serve as a model for one with Tanzania with respect to potential spills along the East African Crude Oil Pipeline. A similar agreement with Kenya may also be explored due to the presence of a refined products storage terminal on Lake Victoria that receives products from Kisumu. The Nile Basin Commission, once formed under the Nile Basin Cooperative Framework Agreement 2010, would also provide a good platform for such negotiations between the relevant affected countries. Any bilateral or regional plan developed to address transboundary oil spills and related emergencies should include joint training exercises.

Other areas of high spill risk that are outside the oil districts, such as Lake Victoria, also have regional, transboundary considerations, and would need to be part of the NOSCP as it evolves forward.

- 6.4 Ensure that local and national disaster management authorities and relevant institutions e.g., the OPM Department of Disaster Preparedness and Management and the National Emergency Response Centre, are part of oil spill contingency exercises.
- 6.5 District oil spill (and multi-hazard) contingency plans should also be finalized for the Albertine Graben districts and developed for districts along the EACOP as first responders. Similarly, MDAs should also develop and finalize their own disaster contingency plans. The district level disaster management plans and the District Climate Change Action Plans (which require a climate risk and vulnerability assessment) being developed under the NEA 2019 should inform each other.
- 6.6 Ongoing national efforts coordinated by NEMA to develop and/or update environmental sensitivity mapping should be tailored specifically to inform the development of oil spill preparedness planning and response strategies. Adopting the IMO/IPIECA/IOPG Good Practice Guidelines on Sensitivity Mapping for Oil Spill Response (IPIECA *et al.* 2016), should be considered as a basis for developing sensitivity maps and work towards development of tactical and strategic maps for oil spill preparedness, including logistics maps, and for oil spill response, including site specific tactical response plans and shoreline clean-up plans.

FINDING 7:

Continuous monitoring of the impact of oil and gas activities on biodiversity and co-existence with tourism activities is more critical than ever in the development and production phase.

Current Status

Under the National Environment Act 2019, a project developer has a legal obligation to adopt and apply the mitigation hierarchy principles for all projects that require an environmental and social impact assessment or an environmental risk assessment.⁴⁷ As a part of the ESIA process, developers are required to submit Environmental and Social Management Plans (ESMPs) and develop biodiversity baselines against which they will be monitored.

In Uganda, UWA is the statutory authority for the management and protection of wildlife in and outside protected areas. The Uganda Wildlife Act 2019 envisages wildlife conservation and management in wildlife protected areas such as national parks and wildlife reserves, as well as wildlife management areas such as wildlife sanctuaries set up for the protection of a species of wild animal/plant.⁴⁸ UWA, in collaboration with NEA and other Lead agencies, has developed specific sensitivity atlases for Murchison Falls National Park (UWA 2013), Toro Semuliki Wildlife Reserve (UWA 2019), and Queen Elizabeth National Park (UWA 2016) to profile areas of high sensitivity to minimise disturbances from oil and gas activities.

The NFA, NEMA and MWE are other significant regulatory authorities that govern issues related to forestry, noise and light pollution, air and dust and soil quality, and wetlands management within protected areas. All infield and access roads that traverse across wetlands, streams and river require prior permits under the National Environment (Wetlands, Riverbanks and Lakeshores Management) Regulations SI. No. 153-5.

NEMA together with the Norwegian Environment Agency developed the Albertine Graben Environment Monitoring Plan (AGEMP) in 2012, which has subsequently been updated in 2022 (NEMA 2022b). The AGEMP clearly spells out the roles of each institution in monitoring oil and gas activities, including the use of the monitoring plan in their annual work plan. The plan also recommended the development of Albertine Graben Environment Baseline Report. The baseline report was published in 2015, with a monitoring report published in 2022, which shows the changes since 2015.⁴⁹ To support biodiversity conservation, the AGEMP highlights no-go areas and phased land use conversion. Institutions like UWA that have been instrumental in the development of these plans have restructured and adapted their activities to effectively include interventions necessitated by petroleum activities (MEMD 2015). Nevertheless, most institutions are yet to undertake field monitoring regularly as stipulated in the plan.

The Tilenga Project located within the Murchison Falls National Park includes the following plans: Biodiversity Management Plan (BMP), Biodiversity Ecosystem Services Management Plan, Biodiversity Ecosystems Services Action Plan, Biodiversity Monitoring and Evaluation Plan, Site Restoration Plan, Site Clearance Plan, Wetlands Management Plan, and the Invasive Alien Species Management Plan. The Tilenga Project has approved land permits to operate on nearly 10% of the Murchison Falls National Park (3,840 km²) but has voluntarily reduced it to less than 1% within the park and relinquished undeveloped areas.

⁴⁷ National Environment Act 2019, s 115. The mitigation hierarchy supports a set of prioritized principles and actions related to incident avoidance and minimization, restoration, and the offset of potential environmental and social impacts. It is a crucial step for oil and gas development projects aiming to achieve no overall negative impact on biodiversity (No Net Loss) or, even better, a Net Gain of biodiversity.

⁴⁸ Uganda Wildlife Act 2019. ss 26, 27.

⁴⁹ The needs identified by AGEMP 2022 includes the following: a) More weather stations in the Albertine Graben; b) More water quantity and quality monitoring stations; c) A fully equipped laboratory in the region; d) Air quality monitoring stations in the AG established; e) Surveys on stress levels on animals undertaken in National Parks where there are activities; f) Animal census regularly undertaken in National Parks; g) Study and conduct a census on animals outside Protected Areas; h) Carry out soil and plant samples for analysis including below and above biodiversity surveys; i) Fish catch and frame surveys should be regularly undertaken on the major water bodies in AG (NEMA 2022b).



Restored Well Pad Site in Tulow-1 near Lake Albert 2017.
© UNEP-WCMC/Sharon Brooks



To avoid introducing
invasive species,
the developer is
required to keep
vegetation as endemic
or local as possible

The Kingfisher Project ESMPs include the Noise and Vibration Management Plan, the Biodiversity Management Plan (BMP), the Cultural Heritage Management Plan, the Ecosystem Services Management Plan, the Visual Assessment Management Plan, the Influx Management Plan, and Soil Erosion and Siltation Management Plan. Mitigation measures against invasive species are included in the Kingfisher BMP. Furthermore, the BMP also puts in measures to reduce risk to wildlife and minimize further loss, fragmentation, and degradation of habitat in the Bugoma Central Forest Reserve (CFR) through which an oil road passes. The Bugoma CFR is known for being a biodiversity hotspot and acts as a network and corridor for critical biodiversity sites in Uganda. Both the Kingfisher and Tilenga project BMPs commit to using lessons learnt from monitoring as part of an adaptive management approach.

The Kingfisher project's cultural heritage management plan includes "chance find" procedures for any potential archaeological and paleontological finds. In the event any cultural artifact is recovered, they are to be presented to the relevant local authority and the National Museum for approval. The MWTA, however, does not anticipate precedence being given to protection of such heritage over development activities given the relatively low public interest and low state capacity in this matter. Nevertheless, UNRA does conduct cultural impact assessments in all instances where it may come across such cultural artifacts during road construction.

The project developer is required to implement environmental restoration and biodiversity offsets on a net-benefit basis, which includes the development of a restoration plan (as a part of the Biodiversity Management Plan) that comes into effect 3 months from completion of activities or as specified in the CoA, whichever is earlier. To avoid introducing invasive species, the developer is required to keep vegetation as endemic or local as possible, whilst encouraging natural regeneration or rehabilitation with indigenous plant species. Any restoration done needs to be certified as satisfactory by NEMA, UWA and other relevant MDAs. For example, in Tilenga, excavated sand has been spread over areas that will remain undisturbed to enable natural revegetation or will be used to increase the height of the sound absorbing bund walls around the site to reduce noise pollution. Monthly monitoring is undertaken by UWA Warden based on the Biodiversity Management Plan. Invasive species management is being done at Tilenga by biodiversity specialists.

The UWA's draft Guidelines for Implementation of Biodiversity Offsets in and adjacent to Wildlife Protected Areas states that offsets must be the last option in a mitigation process that stresses avoidance or mitigation of impacts. However, biodiversity offsets are required for major projects by Government or the private sector that have or are likely to have residual impacts. The developer in consultation with UWA sets targets to be achieved at the end of the offset implementation, and a biodiversity and ecosystem services action plan is developed by the developer that will spell out actions, responsibilities, and indicators, monitoring, and evaluation, plus the cost of implementation before commencement of the development.

Civil society organizations such as the World Wildlife Fund Uganda (WWF Uganda) and the World Conservation Society (WCS) are also active in biodiversity management in the country. Both these organizations have been part of various ongoing and completed environmental sensitivity mapping initiatives for Murchison Falls National Park, Toro Semuliki Wildlife Reserve, and Queen Elizabeth National Park.

The Murchison Falls National Park (MFNP) is the largest and second-most visited national park in Uganda. Nine of 34 wells of the Tilenga project will be placed in the MFNP. It is surrounded by the Bugungu Wildlife Reserve and the Karuma Wildlife Reserve and is located close to the Murchison Falls-Albert Delta Wetland System Ramsar Site which is a designated Important Bird Area.

The Operational Guidelines for Development in Wildlife Protected Areas places an obligation on the developer to concentrate their activities during low tourism season, if possible (TotalEnergies 2020c).⁵⁰ A Tourism Management Plan has been developed by the Tilenga project in 2020 to manage the risks and impacts on tourism.⁵¹ Mitigation measures to address potential impacts include:

- i. Working with UWA to open new tourism routes and tracks to divert tourism traffic from project activities,
- ii. Scheduling majority of project activities in low tourism seasons as much as possible,
- iii. Monitoring MFNP revenue performance to track any reduction in tourism revenue,
- iv. Reducing traffic and noise as much as possible near lodges and tourism routes, especially during the construction phase, and
- v. Collaborating with UWA to ensure timely ferry maintenance so that the transport of Project's equipment does not impact on tourism.⁵²

The Tilenga project convenes quarterly meetings with Government and private tourism stakeholders to share reports and act as a tourism-related grievance redressal platform. Such meetings are attended by UWA, MTWA, PAU, MEMD, Uganda Tourism Board, affected local government, Uganda Tourism Association, Association of Uganda Tour Operators, Uganda Hotel Owners Association, Uganda Safari Guides Association and Uganda Community Tourism Association. Additionally, the landscape management plan has also been put in place to reduce visual intrusion and avoid loss of natural scenic views in MFNP.⁵³

⁵⁰ For one-off activities, UWA works with TotalEnergies to ensure they are carried out during the low tourism season or during hours when tourist movement is minimal. However, this can be a challenge when the activities are continuous by nature.

⁵¹ The Tourism Management Plan also commits to contract a third party to undertake a study on visitors' satisfaction and perception while in MFNP to further understand the project's impact on tourism. The efficiency of the Tourism Management Plan will be monitored by Tilenga project using the following impact indicators:

- Annual numbers of tourists visiting and staying in MFNP (MTWA maintains annual visitation numbers to the national parks in the country.)
- Level of visitor satisfaction for tourists visiting MFNP
- Frequency of wildlife sightings along the tourism routes and tracks.
- Revenue generated by tourism in MFNP to UWA, lodge owners and the surrounding communities.
- Impact of tourism development on the socio-economic environments such as consumption patterns and income levels in local communities

⁵² The ferry is no longer in operation

⁵³ The project site has used colours that match the surroundings for the infrastructure and fencing, and established earth bunds around well pads within the park.

Key Issues

i) Impacts on biodiversity and wildlife.

UWA is concerned that the increased human and vehicular traffic linked with oil and gas activities may lead to animal disturbance. UNRA has noted (unverified) reports of increased road kills within the protected areas. Measures to decrease road kills have been adopted in the form of building narrower roads and with more speed bumps and integrating animal movement patterns in the initial planning and mapping stage of road construction. CCTV cameras are also planned to be placed along the roads as a deterrent and for better monitoring. UWA has also developed the WildWays app together with the Norwegian Institute for Nature Research (NINA) to monitor road kills along roads in wildlife protected areas.

UWA further noted the continued need for regular awareness raising and education of oil field workers on the ecological sensitivity of the project sites.⁵⁴ Routine inspections by wildlife rangers have recorded occasional incursions by wildlife into the project area raising concerns of accidental injuries to wildlife and potential human-wildlife conflicts. UWA and TotalEnergies, along with the World Conservation Society (WCS), have initiated joint monitoring of increased human/wildlife conflict and impacts on elephants, mammals, and reintroduction of rhinos in Murchison Falls National Park.

Previous WCS studies on impact of exploration on wildlife carried out in the Murchison Falls National Park and the Kabwoya Wildlife Reserve showed that both seismic activities and the drilling of oil wells on pads resulted in many species, especially large mammals, moving up to 750-1000 metres from the site when drilling was taking place. However, once pads were established and drilling finished, animals returned to within 250 metres of a pad (WCS Uganda 2021).



There is continued need for regular awareness raising and education of oil field workers on the ecological sensitivity of the project sites

The 153.5 ha area that has been cleared in the Murchison Falls National Park for project activities will inevitably result in temporary habitat fragmentation. However, site restoration activities undertaken post-exploration has yielded successful results in minimizing long-term alterations to landscape. Given that CoAs explicitly prohibit introduction of alien species, natural revegetation is the preferred route adopted for restoring project sites. In the meantime, there will continue to be risk of soil erosion from site clearances and constructing earth bunds around the drill pads to serve as noise buffers.⁵⁵



Paraa, a word from the local Luo language, means 'place of hippos', which supports the largest concentration of wildlife in Murchison Falls National Park 2017.

© UNEP-WCMC/Sharon Brooks

⁵⁴ According to UWA, animals used to enter the working site when the fence had not yet been completed. However, now that the site has been secured, they no longer enter the well pad sites. Lighting at night is also required to be minimized by directing the lighting inward towards the well pads.

⁵⁵ According to UWA's presentation at the National CNA kick-off meeting in March 2023, with greater human influx into these areas, there has been an increase in illegal activities such as poaching, overfishing, and illegal resource harvesting. However, there is no data to attribute or support a direct causal link between increase in illegal activities with oil and gas developments in the region.

(ii) Need for enhanced site monitoring capacities in protected areas.

The UWA Warden on site conducts daily monitoring at development and restoration sites. The Oil and Gas Monitoring Unit from UWA headquarters participates along with NEMA for quarterly inspections, as well as during the annual inspection to carry out an environmental audit. Compliance exercises review noise, water, vibration, and biodiversity management requirements as required in the CoA. The daily and monthly inspection findings are communicated directly to the operator for immediate rectification as needed. Monthly meetings are scheduled for activity updates.

However, the MDAs and individuals responsible for these activities are severely overstretched due to poor staffing and inadequate technical expertise. For instance, the Tilenga Project requires at least three Wardens on site, but currently UWA can deploy only one. Similarly, the UWA headquarters unit in Kampala has only two staff members, with two other posts remaining vacant.⁵⁶ As Uganda heads into production phase and the pace of activity in the protected areas increases, UWA will be faced with increased strain on its small team. Any new exploration or production activities in other wildlife conservation areas/biodiversity hotspots, such as in Pain Upe Wildlife Reserve and Bokora-Matheniko Wildlife Reserve, will also increase this strain on the current capacities of the regulatory agencies, especially UWA.

(iii) Monitoring impacts on tourism

Local tourism operators have raised concerns over potential loss of revenue due to noise, dust, light pollution, road traffic and visual impact from oil and gas activities and infrastructure in the region (see **Figure 7**) (CNOOC Uganda *et al.* 2019). Given that UWA is primarily financed by the tourism revenue from the areas under its jurisdiction, the potential impacts of oil and gas activities on tourism will directly impact on UWA's regulatory and operational capacities.

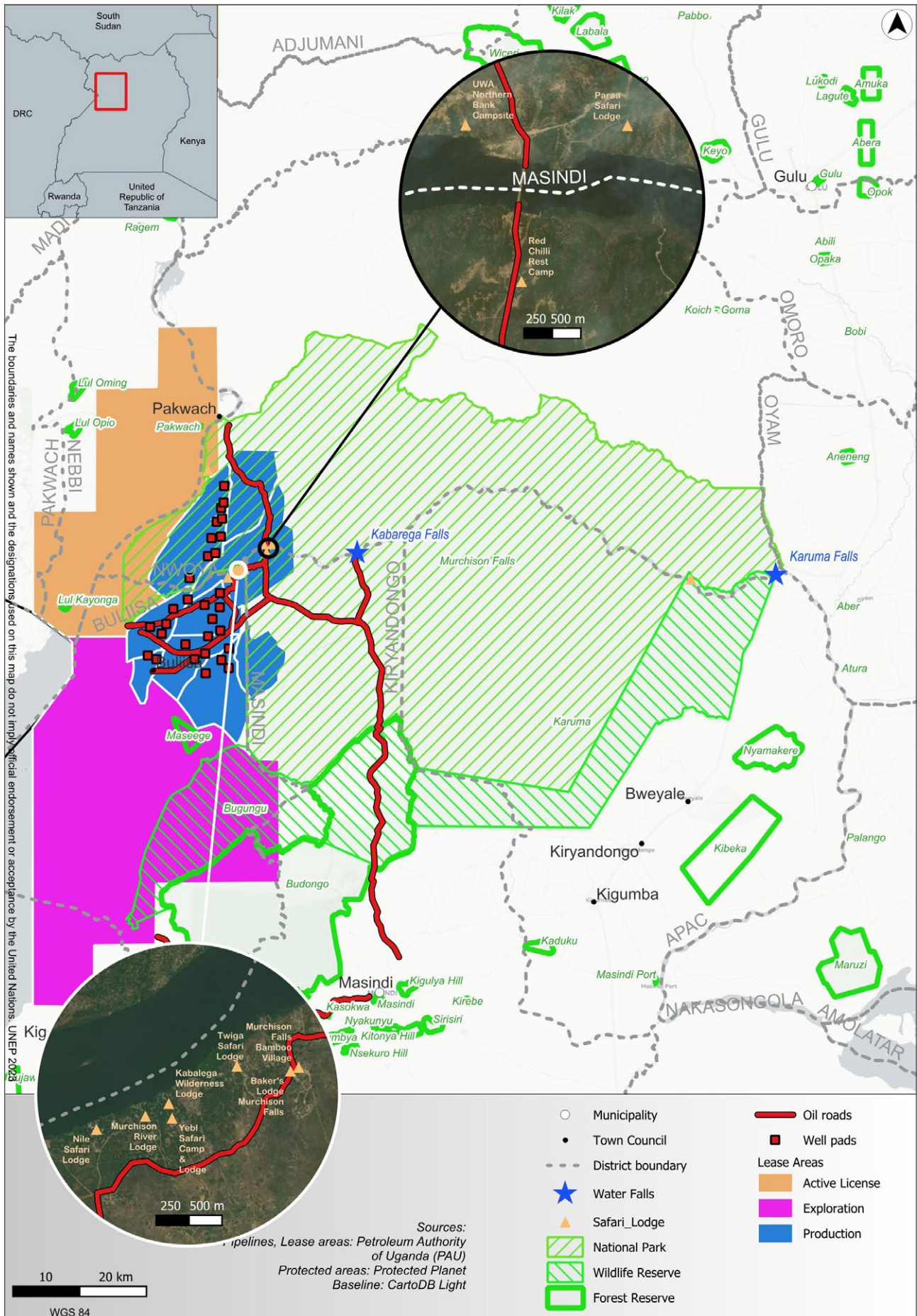
There are also ongoing studies on the impact of oil and gas activities on tourism. This includes a World Bank funded regional tourism development plan for North-Western Tourism Region, and a German Agency for International Cooperation (GIZ) funded PAU study on the impact on human resources capacity and linkages between oil and gas activities and tourism. There is insufficient data at present to determine the impact of Ugandan oil development on visitors coming to see the national parks. There is a clear need, therefore, to ensure continuous monitoring of oil and gas activities to reduce their impact on wildlife and the tourism sector.



Uganda Wildlife Authority Checkpost for Entry into Murchison Falls National Park March 2023.
© UNEP/Erich Gundlach

⁵⁶ Response provided by UWA focal points for this CNA to UNEP's follow-up survey 2023.

Figure 7: Tourism lodges and infrastructure in the Murchison Falls National Park area.



As the Tilenga project is being developed within a protected area, there was a specific need to develop exclusive oil roads and divert existing tourism circuits. Therefore, to avoid disturbances to tourism, operators were required to construct new tourism roads away from oil roads (see **Figure 8**). UNRA has completed most of the tourism roads in the Albertine Graben region; it is expected that 80% of road construction targets will be met in 2023. However, it remains to be seen whether this improved access will translate into higher rates of tourism in the region.

MTWA monitors the number of annual visitors to national parks. Any reduction in visitor numbers will be consequential for environmental management of protected areas as UWA depends on tourism revenue as an important means to fund its activities. As oil and gas development moves into production phase, continuous monitoring of tourism data in the oil districts will be critically important. There is also the need to ensure that Tourism Management Plans of operators, especially TotalEnergies in MFNP, are being implemented, monitored, and adjusted based on emerging issues.

Way Forward and Recommendations

- 7.1 As the primary authority responsible for oversight of activities within wildlife protected areas and wildlife sanctuaries, UWA critically needs financial and technical support to fulfill its responsibilities.

UWA needs critical financial and technical support to fulfill its responsibilities

Round-the-year full staffing of UWA personnel are required, i.e., there should always be three Wardens assigned in the Murchison Falls National Park who are backstopped by the designated UWA personnel in the Oil and Gas Monitoring Unit located in the head office in Kampala. All vacant positions in UWA's headquarters should be filled. There must also be a sufficient number of Rangers employed so that the Wardens can focus on their more technical responsibilities. This need should be part of the discussions between TotalEnergies and UWA as it finalizes its MOU for the production phase.

Technical training of staff, particularly Wardens in the MFNP relating to understanding environmental conditions in the park, monitoring requirements, data management, and reporting must be prioritized. UWA field monitoring personnel will need to be provided with a vehicle and minimal monitoring equipment such as safety gear, GPS, camera, clipboards, data sheets, and sampling jars. Any new exploration or production activities in other wildlife protected areas/biodiversity hotspots will require a commensurate increase in the overall capacities of the regulatory agencies to ensure a high standard compliance monitoring.

- 7.2 Development of biodiversity management plans developed by operators to reduce oil and gas impact on other development sectors, especially on tourism, and their subsequent monitoring also require more focused attention by the relevant MDAs (in particular NEMA and UWA). As per international best practice, biodiversity offsetting should only be considered as a last resort, and in cases of dealing with residual impacts, it is advisable to avoid activities altogether, particularly in highly sensitive habitats where potential impacts may be long-lasting and significant. Offsets may lead to a net gain in nature elsewhere but do not necessarily account for on-site impacts on local communities nor address site-level environmental and social concerns.
- 7.3 MTWA, with UWA, will need to ensure continuous data monitoring of tourism flows in protected areas where petroleum activities are taking place, including regular consultations with local tourism operators on current and emerging issues of concern. Ongoing studies on oil and gas impacts on tourism should be coordinated and effectively channelled to inform policy and regulatory measures. These measures may be applicable to all conservation areas which are open for both tourism and development activities.

FINDING 8:

Institutional capacity in both national and district government institutions to implement environmental oversight of oil and gas activities remains inadequate.

As Uganda's petroleum sector moves into its development and production phases, as noted in this report's key findings, environmental compliance monitoring should be a top priority for Government and industry to operate safely and reduce environmental and pollution risks. This section reflects on the Government's institutional capacities based on their respective mandates – both at the national and district levels – to ensure industry compliance and maintain environmental oversight of petroleum activities. Important challenges with regards to human resources, technical expertise, and monitoring equipment are highlighted and have persisted since the 2017 CNA process.

Annex F provides a comparison of overall institutional capacities from the 2017 and the 2023 CNA processes, which draw from consultation meetings, survey responses and desk review. While there are noted improvements under national policy/legal/regulatory frameworks and capacities of national private sector entities (e.g., national EIA practitioners and consultants), capacity gaps remain under institutional and technical capacities, including for disaster management and oil spill preparedness and response (as discussed above).

There is also an overall improvement in coordination mechanisms because of increased civil society membership in established multistakeholder mechanism such as the AGEMP and periodic meetings held by the oil companies with their respective local government officials. However, the lack of adequate funding to such multi-stakeholder mechanisms continues to impede the efficiency of such coordination platforms. There is more awareness among the MDAs of the gender-differential impact of oil and gas activities on local communities. Despite the inclusion of CSOs in multistakeholder committees, there is also a perception of reduced civil society space to voice their concerns on oil and gas-related issues.



NEMA has expanded its Oil and Gas Unit from 5 personnel in 2015 to 9 personnel in 2023

Current Status

Both the Kingfisher and Tilenga Projects have employed reputable international consulting companies to complete Environmental and Social Impact Assessments (ESIAs) documentation and development of Environmental Management Plans (EMPs) which have been approved by regulatory authorities through the issuance of a Certificate of Approval (CoA). Most of these material are online and available for outside review. A critical part of the ESIs and the CoAs is that they commit the companies to implement a series of environmental and social protection measures. For example, the Tilenga Project's ESMP Mitigation Checklist contains 481 items, each of which requires follow-up and verification by MDAs. The CoA requirements for each Project have over 130 items requiring verification and long-term monitoring.

At the national level, lead Government institutions have made some progress with strengthening capacities to exercise oversight of the petroleum sector.

Since 2017, UWA has now begun to convene a National Multisectoral Technical Monitoring Committee for matters related to the oil and gas sector. PAU has expanded from having seven full time staff positions in 2017 to 196 in 2023. They deploy designated staff to monitor project sites in Kingfisher and Tilenga on a rotational basis. Stationed officers are responsible for generating daily reports with technical, health, safety, and environmental updates.⁵⁷ NEMA has expanded its Oil and Gas Unit from 5 personnel in 2015 to 9 personnel in 2023.

⁵⁷ As per responses provided by UWA's focal points for the CNA to UNEP's follow-up survey 2023.

While still limited in total numbers with regards to the scale and scope of responsibilities, a number of MDA personnel assigned to oil and gas activities have received internationally sponsored training as well as on-the-job training experience. Trainings have previously been provided by Norway's Oil for Development Programme, UNEP, UNEP-WCMC, as well as United States Agency for International Development's (USAID) Environmental Management in the Oil Sector Programme (2013-2017), on a range of technical topics, including: chemicals and waste management in the oil and gas sector, foundation course on strengthening environmental management in the oil and gas sector, oil spill preparedness and response, certification of equipment used in operations, auditing of quality management system, review of ESIA, and environmental sensitivity mapping and data management.⁵⁸

Historically, non-governmental organizations (NGOs) such as the World Wildlife Fund for Nature (WWF) and World Conservation Society (WCS) have also provided training and technical assistance, e.g., on EIAs for oil and gas and wildlife monitoring, to the Government.

MDAs have made substantial efforts to coordinate field visits of staff from Kampala to utilize the same vehicle, saving on fuel and vehicle needs. MEMD noted in its 2020 update of the status of SEA recommendations that USAID had previously provided equipment for oil and gas monitoring that went to NEMA, UWA, NFA and district local governments in the form of GIS equipment and vehicles. They have also been trained in using some of the equipment for data collection. MWE has equipment and mobile labs to conduct water quality tests; however, the funds are insufficient to undertake routine monitoring.

District offices, especially in the main "oil" districts of Hoima, Buliisa and Nwoya, are well aware of their oversight and monitoring responsibilities. Among many other tasks, District Environmental Officers (DEOs) are charged with reviews of ESIA reports for oil and gas projects, annual environmental audit reports and quarterly reports, quarterly monitoring visits with NEMA and/or other lead agencies, responding to Ministry requests, participation in radio programs to build community awareness, and facilitation of stakeholder engagement and local grievance redressals.

The potential for additional oil and gas discoveries in Uganda is likely and will put further pressure on Government institutions and personnel to be able to review and monitor planned oil and gas activities. While Hoima, Kikuube and Buliisa, are the center of oil and gas activities in 2023, twelve other districts in the Albertine Graben either have ongoing exploration or approved leases for exploration.⁵⁹ In early 2023, an additional three large areas have been leased for exploration and three other areas are under recent licensing to proceed to exploration activities within the Albertine Graben. Additionally, there are four other basins of interest in the country (see **Figure 2**). The learning process for these districts is just beginning and will need substantial support.

The potential for additional oil and gas discoveries in Uganda is likely and will put further pressure on Government institutions and personnel

⁵⁸ Of the MDAs who responded to follow-up surveys, MWT, DNRO Buliisa, PAU and NEMA have confirmed receiving training on oil and gas issues since 2017.

⁵⁹ The districts are Adjumani, Buliisa, Hoima, Kabarole, Kagadi, Kikuube, Kyenjojo, Madi Okollo, Masindi, Ntoroko, Obongi, Nebbi, Nwoya, Pakwach, and Yumbe.

Key Issues

(i) Human Resources Capacity

Despite good intentions and hard work by dedicated individuals in lead MDAs and District Governments, they are overwhelmed by the extent of oversight required for current oil and gas activities taking place. Across all MDAs interviewed, the consensus is that the limited number of personnel are over-stretched with the tasks assigned, including documents' review, field verifications, responding to internal and external queries, attending related meetings with the public and formal presentations.

Lead MDAs for environmental oversight are especially short staffed. For instance, UWA has only two positions filled, although it has four positions assigned to the Oil and Gas Monitoring Unit. In Murchison Falls National Park, UWA has only one Warden assigned to monitoring, even though at least three Wardens are needed to meet field monitoring requirements.

Furthermore, MWE noted that all environment and safety officers were being employed under temporary consultant contracts and was contingent on the availability of external funding. This has led to poor retention of skilled personnel within MDAs.

At the district level, the current (2023) human resource capacity is insufficient to fill all positions required for environmental/natural resource management. The core functions of the District Natural Resource Management Officers (DNROs) and District Environment Officers (DEOs) are often the same, even if these are recognized as two distinct positions. Existing personnel face competing demands for their time and increased workloads as oil field operations move into production phase.

To carry out their environmental management and oversight functions, districts do not receive nor request a separate budget for covering oil and gas issues. Environment Committees which are established under the Urban and District Councils are often non-functional. This is compounded by inadequate budget allocations for the environmental sector in general in districts. Based on consultations, there appears to be limited buy-in from District political leaders for addressing environmental issues, along with low environmental awareness in communities and other local stakeholders to advocate for stronger environmental oversight and accountability.

(ii) Technical expertise

As new personnel come on board, and as new tasks become evident (associated directly with increased compliance monitoring requirements), additional and relatively specific, high-level training will be required. Previously trained personnel have also emphasized the need for regular refresher courses and more direct field level training.

For example, extensive data reports will be incoming to the MDAs from each operating company in accordance with ESIA commitments and CoA requirements. Advanced training to interpret these results (for air, water, noise, sediment, etc.) is required to adequately review and verify conformance with the requirements for each item.

The need for additional training to review ESIA and field monitoring documentation was raised by PAU while referring to the increased complexity of the reports submitted by operators. According to MWE, more capacity is needed by the MDAs to oversee implementation of biodiversity offsets. MTWA noted its inability to effectively oversee UWA's activities in oil and gas monitoring due to its own lack of required technical expertise.

Previously trained personnel have also emphasized the need for regular refresher courses and more direct field level training

The Tilenga Project officials consulted with during the fact-finding mission noted the need for stronger technical expertise to enable UWA Wardens to undertake independent monitoring. Currently, the oil company and UWA undertake weekly joint compliance inspections of all sites within the protected areas. UWA also raised the need for its Wardens to be technically skilled and trained in field level expertise in biodiversity, pollution and emissions and discharges issues to effectively fulfil their oversight roles.

At the district level, DEOs would also benefit from further training on various environmental aspects related to upstream oil and gas development, including undertaking ESIA document reviews and compliance monitoring. The lack of adequate personnel with the necessary technical skills on oil and gas issues, and time and human resources constraints due to competing work demands have also affected the quality of ESIA reviews at the district levels. The District Technical Planning Committee at the district levels also require training for better informed planning related to oil and gas infrastructure requirements.⁶⁰

(iii) Limited equipment for monitoring of oil and gas activities

Related to budget constraints, the lack of equipment to enable independent monitoring of oil and gas activities was raised as an issue across the MDAs consulted. At the minimum, MDAs require a vehicle, GPS, camera, personal protective equipment (PPE), and finances to buy fuel, food, and other relatively small items to support required field monitoring, inspections, and CoA verifications. Transport for all MDAs is required from Kampala and/or Entebbe to the field project sites, but also DNROs/DEOs require some form of transport to move within their districts.



The lack of a dedicated vehicle(s) and other field equipment has hindered Government ability to monitor ESIA commitments and CoA requirements

The lack of a dedicated vehicle(s) and other field equipment has hindered Government ability to monitor ESIA commitments and CoA requirements. Several MDAs also expressed additional needs for dedicated field air and water monitoring equipment to conduct independent evaluations. Currently, specialized contractors employed by each development project collect and analyse samples, the results of which are provided to the relevant MDA. Laboratory analyses are required for most water samples. The analyses associated with air and water monitoring are complex and require relatively high technical skills and equipment. Furthermore, data on air pollution is sparse due to the absence of air pollution detection equipment, and there is also currently no enforceable regulatory framework for monitoring and regulating air pollution.

Prioritization of immediate equipment needs such as those relating to increased accessibility to project sites and acquiring GPS and photographic information would be an effective way of addressing this capacity challenge (United Nations 2023).⁶¹ Without adequate attention to supplying field vehicles and minimal monitoring equipment, the MDAs will be unable to fully complete their mandated monitoring and verification role.

Other equipment that requires additional specialized technical skills will be effective only once the staff has been adequately trained in their use and the immediate priorities, as outline above, have been met.

Based on interviews with DNROs and/or DEOs in Buliisa, Hoima and Nwoya Districts, there is also need for basic equipment to undertake independent field monitoring, which include: GPS, personal protection equipment, cameras, and vehicles. A prioritization of the equipment needs at the district level may enable the national authorities to address the most immediate and feasible concerns.

⁶⁰ The District Technical Planning Committee consist of all Heads of Departments, Units and Sections in the District.

⁶¹ United Nations in Uganda donated equipment to UWA to strengthen the capacity of its officers to protect wildlife and conservation areas from illegal use (United Nations 2023).

Way Forward and Recommendations

- 8.1 In order to develop a systematic programme for institutional capacity development, a first stage is to fill all available/vacant positions across MDAs and in District Governments, especially those related to exercising environmental oversight in the oil and gas sector. A second stage is to review personnel requirements among all MDAs and Districts having environment and oil and gas responsibilities. Such a review should be coordinated by a lead agency, e.g., NEMA, through existing coordination mechanisms such as the Multi-Sectoral Environmental Monitoring Committee or the SEA Technical Implementation Committee. For districts, this may involve a restructuring of existing positions.

Each MDA needs to define: (i) the tasks associated with oil and gas that the MDA performs based on their respective institutional mandates, laws, and regulations as well as the remaining 2013 SEA Recommendations, (ii) general time and technical requirements to complete those activities, and then (iii) a listing of required personnel and the necessary academic and/or field experience. This coordination process will assist in understanding the requirements faced by each MDA and serve to reduce duplication among MDAs. A similar exercise needs to be conducted at the District Government level (discussed further below).

There should also be a concerted effort to ensure that gender mainstreaming is adopted in personnel recruitment as well as in skills trainings in order to encourage more professional women in Government with expertise in the sector (UNEP 2022).

- 8.2 Uganda will need to develop a long-term capacity development strategy and programme for Government officials, with a designated Government Environmental Education focal point to drive it. This process will require an implementation plan and allocated budgets. A Training of Trainers/Instructors programme may be developed to support scaled up delivery of multiple training courses and expand training outreach to District Government officials. An outline of recommended training elements and recipients is provided in Annex E. Gender mainstreaming and gender-based targets should be established as part of the training programme.

A multi-faceted training program for MDAs with mandates in environmental governance needs to be established, including the major components required for monitoring as listed in the CoAs, namely: monitoring of noise, air quality, water quality, sediment analyses, light pollution, and wildlife and biodiversity impacts, with a focus specifically on what technical expertise and skills are needed to oversee compliance requirements to be undertaken by oil operators.

The ESIA monitoring plans (an overview of what needs to be done) and method statements (how it will be done) provided by each operator serves as a starting point to understand the parameters to be monitored. Training for this component should focus on the methods used; the reason for method selection; expected level of accuracy and variability; sampling procedures; calibration requirements; interpretation and plotting of results; and data submission and storage requirements for upload to a designated national database e.g., Environment Information Network hosted at NEMA. Discussions with operators in the selected methods should also be part of developing the training programme for MDAs.



Improved coordination and collaboration with project operators for skills training is needed

- 8.3 As part of long-term capacity building efforts, Uganda could establish formal collaboration with National Universities and public training institutions, such as the Uganda Petroleum Institute, in Uganda to introduce diploma courses, graduate courses and short courses on environmental management in the oil and gas sector as a means of scaling up training delivery and outreach in the country. This would enable current public officials to be trained on a regular basis and also cultivate a new generation of professionals with a background on the environment aspects of the oil and gas sector.⁶² Interviews with the DNRO/DEO of Hoima noted the importance of training up the younger generation, as senior Government personnel reach retirement age or transfer to other positions.
- 8.4 Improved coordination and collaboration with project operators for skills training is needed. MDAs and District officers should take advantage of opportunities for on-the-job training by accompanying project operators when they are performing their requisite field sampling and laboratory analyses. For instance, waste treatment facilities, such as EnviroServ, regularly undertake noise, water, and air emissions monitoring with equipment. This provides an opportunity for hands-on learning by MDAs and Districts if their field site visits are timed when monitoring by EnviroServ is being undertaken. In turn, project operators must be held accountable for providing and delivering the proposed trainings as listed in their respective ESMPs including for instance Health, Safety and Environment, biodiversity management, construction engineering, specific proprietary technologies (e.g., compressors, use of oil and gas industry software for instance geological interpretation, etc.). Such training should be made more accessible to relevant MDAs and District officers.
- 8.5 MDAs require steady funding to support both field monitoring (with equipment) and office requirements. With insecure or severely limited financial support, MDAs will not be able to complete their oversight role of oil and gas activities. MDAs, in turn, need to ensure that funds are used most efficiently by coordinating field visits, training sessions, seminars, and sharing monitoring equipment. In addition to national budgets and other international sources of financing, oil operators should be encouraged to contribute to a central training fund that supports Government environmental compliance monitoring and other training needs.
- 8.6 To enhance chemical analytical capabilities, it is recommended that Uganda strengthen capacities of its designated (national) laboratory that will serve as a guidance centre to other in-country laboratories doing oil and gas measurements. The designated national laboratory can also establish links with an accredited international laboratory to enable best-available chemical analytical technology to be supported and maintained in Uganda. Proper procedures, reagents, samples spiked with known oil quantities, could all be shared with other laboratories in Uganda to ensure compatibility of results among laboratories and enhance the capacity of locally trained scientists and technicians.

⁶² Such collaborative efforts should build on the outcomes (and lessons) of previous initiatives, such as the US AID-funded "Environmental Management for the Oil Sector" capacity building programme (2013-2017) which developed a number of short-term training programmes for universities as well as Government institutions, and initiated development of Graduate/master's curricula in universities (with Makerere University in particular) focusing on biodiversity conservation in the oil sector.

8.7 Regarding the capacity needs of district-level functionaries engaged in environmental governance in the petroleum sector, there are three components to our recommended actions:

- **Personnel support:** Oil and gas districts should develop operational budgets for DNRO/DEOs which allocate the minimum required personnel to fulfil obligations related to monitoring of oil and gas activities. Specific positions and tasks, and the required minimal equipment to perform tasks, should be first identified by each district office for review at the national Ministry of Local Government and the respective national MDAs involved (e.g., MEMD, MWE, MTWA etc.) to determine the appropriate sources of funding. Recruitment of vacant staff positions should be prioritized to reduce the burden on existing staff responsible for oil and gas oversight.
- **Equipment and vehicle support:** It is critical that district personnel be able to get to the field with minimal survey equipment (safety gear, GPS, camera, clip boards, etc.) and vehicles to fulfil their monitoring requirements and alert district leaders of ongoing activities related to oil and gas development in their district.
- **Technical training on critical elements:** Like the MDAs, personnel from each oil and gas district, as well as national park and forest Wardens, should participate in foundational and specialized training on environment and oil and gas, as outlined in Annex E. As noted above, priority training needs should focus on understanding environmental compliance requirements as stipulated by the CoAs, including for instance, the actual sampling program being undertaken by oil field operators and interpreting the results obtained.

Given that the above-mentioned recommended actions will require increased budgets for Districts, it was suggested that additional funds could be secured from the National Government as special conditional grants for oil and gas monitoring activities.



UNEP Foundation Course on Oil and Gas Exploration and Production and Strengthening Environmental Management June 2017.
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FINDING 9:

Data management for environmental governance related to oil and gas issues needs to be strengthened.

The availability, storage, and efficient retrieval of environmental data, resulting from ESIA, CoAs, and industry required field studies is important for effective Government oversight of these activities. Environmental databases accessible to multiple users are important for strengthening ESIA reviews and contribute to environmental and social baseline information against which industry compliance can be monitored.

The four primary features of environmental datasets are its availability, its accessibility to end users, the capacity of users to work with, operate and benefit from the information, and the means and mechanisms to update it as new data become available.

Current Status

Currently, many of the MDAs consulted store their data either in hard copies, spreadsheets, or in internal databases. There is a lack of data format integration across institutions; however, there are several systems in various stages of development focusing on different environmental or social attributes depending on the MDA, which has begun to address this issue.

At NEMA, an open environmental information network is being developed called the Environmental Information Network (EIN), under the Uganda-Norway collaboration on Strengthening the Management of the Oil and Gas Sector in Uganda, to standardize environmental information and to act as the central repository for all environmental information. The information is being gathered from all environmental and natural resources initiatives, and such data stored in the EIN would be available online to all institutions. However, NEMA presently does not have the capacity or infrastructure to hold all the data expected to flow into the EIN.

Currently, NEMA and MWE have access to the EIN and each department has a designated focal point in charge of updating the relevant data. When operational, the EIN should provide an environmental management system that will streamline review processes and avoid a duplication of effort among MDAs. The network does not yet have automation capabilities nor the ability to link it to entities/stakeholder beyond the NEMA and MWE staff.



There is a lack of data format integration across institutions

MWE is also equipped with a specialized computer system, provided by the Food and Agriculture Organization (FAO), that serves as the data repository for all MWE-held data. This database is, however, not actively updated due to limited personnel and in-house expertise to navigate the system.

PAU also maintains its own internal environmental management system (EMS) to support its role in monitoring oil and gas activities. PAU representatives emphasized the need for expansion of the EMS such that it is either jointly maintained by key MDAs or at least has a mechanism to ensure linkages among the different existing MDA databases.

Other institutions, such as the Uganda National Roads Authority (UNRA), are also in the process of developing a digital filing and organization system that will help its own compliance monitoring of ESIA and permitting conditions (noise and dust pollution, for instance) granted to developers engaged in construction of oil and tourism roads in protected areas.

While Uganda currently does not have a national greenhouse gases (GHG) emissions inventory for the oil and gas sector, there are ongoing efforts to create a harmonized emissions reporting system for the sector which will include emissions data captured and reported at operator and government level. Similarly, Uganda does not have a dedicated biodiversity database for oil and gas activities. However, it does have an ongoing National Biodiversity Data Bank

project and sensitivity mapping activities nearing completion in the Albertine Graben and Semliki National Park, spearheaded by NEMA in collaboration with UWA, MWE, UWA, Uganda Bureau of Statistics (UBOS), research institutions and CSOs. There is also the Albertine Graben Environment Baseline Report and the data collection manuals that were developed as part of the AGEMP.

Sites of cultural and archaeological importance are also being identified and included in these processes with data obtained from MTWA. Additionally, Indigenous, and local knowledge are now being integrated into the sensitivity mapping processes. All data generated during sensitivity mapping process is uploaded to the same portal, where representatives from lead agencies have user accounts with rights to upload data/information in their custody. Reports on environmental sensitivity are also contained in the submitted ESIA for the Kingfisher and Tilenga Projects.

Key Issues

It is evident from the above that MDAs are undertaking initiatives of varying complexity to develop, integrate and store data, according to their respective mandates. However, there remains issues of accessibility of environmental data held by oil companies. UWA, for instance, has faced delays in receiving responses from oil operators for specific data, e.g., on biodiversity monitoring, increased human/wildlife conflict and impacts on wildlife from oil and gas activities. While companies do research on biodiversity issues, the results are not necessarily communicated to NEMA or UWA, without explicit requests for the same.⁶³

Furthermore, MDAs and CSOs during the consultation process noted a desire to also post the raw data online together with the reports, which would enable an outside review of the quality of collected information and perform research on the 'raw' data. This higher level of complexity in data management would in turn increase the need for data entry and quality control procedures and subsequent personnel and training costs. Data format requirements must be established to receive the data directly from the entity collecting the data to avoid entry errors and duplication of effort.

The amount of data coming in as reports and individual chemical or biological analyses on a quarterly reporting basis is substantial in fulfilment of ESIA and CoA requirements. And new ESIA are expected as newly leased areas begin exploration and those areas under exploration reach a decision to proceed to development. The increase in quantity and types of incoming data from new ESIA, CoA requirements, field data collection activities associated with noise, air emissions, water quality and the identification of socially sensitive sites (archaeological and present-day) cannot be overestimated. Dedicated personnel and financial resources will be necessary to maintain and upgrade data management systems on a continuing basis. Better coordination among MDA actions toward an environmental database system would help avoid duplication of efforts and enable greater efficiency in undertaking environmental regulatory functions.

The sustainability of a database platform should be considered a high priority from the design stage. A long-term strategy to maintain the platform, by ensuring appropriate human resource capacity for its use and data platform maintenance, must be considered. Unfortunately, financial restrictions and inadequate training have inhibited the full use of systems already in place.

MWE noted that, even though computer hardware and data management software have been provided through international funding, it remains unused because of the lack of follow-up training and absence of data management experts in staff positions. Similarly, a university academic noted similar challenges.

⁶³ Training Workshop Highlights from UNEP-WCMC Training delivered on GIS Tools And Methods, Trondheim, Norway 12–16 June 2023 with Ghana and Uganda.

The sustainability of an environmental database platform should be considered a high priority from the design stage

Way Forward and Recommendations

- 9.1 Coordination among database developers in the key MDAs is critical to avoid duplication of effort and for cost savings. There are already several environmental management databases in various stages of development across MDAs. Harmonization of data and databases can be achieved through the multi-institutional data management systems such as the EIN and the AGEMP committees. The database framework developed for EIN, along with the data collection manual developed under the AGEMP's Baseline Environment Report should be shared among the principal agencies, including entry and storage format, structure, sharing capability among MDAs and outside parties, etc.
- 9.2 A web-based interface may also be set-up that directs users to the available environmental data hosted with existing databases and provides shared data access among MDAs. The EIN can be opened up to other MDAs with environmental governance functions.
- 9.3 Data management system(s) developed must also provide for the continued human resource support and training as well as for the physical maintenance⁶⁴ necessary to gain full functionality and sustainability. Capacity building efforts should include training on data collection, analysis, and interpretation.

⁶⁴ This may include, for instance creation and maintenance of a website or website domain, data platform hosting services, cloud storage and hard back-ups, and regular software updates and troubleshooting of the platform itself.

FINDING 10:

Public outreach and awareness raising should be continued to foster public dialogue, information exchange, and accountability.

The oil and gas sector is new to Uganda. As such, misperceptions can rapidly spread and potentially become important concerns to local communities, industry, and Government. Communications on oil and gas activities, at all levels (MDAs, Districts, industry, CSOs and academics), will only get more complex and demanding as new exploration and development projects increase in the Albertine Graben and possibly extend to other basins. Establishing and operationalizing the appropriate communication pathways will benefit the public, industry, and Government now and into the future.

Current Status

The National Environment Act vests in individuals the right of access to environmental information, provided it is not proprietary or confidential information. Such documents may be accessed upon request and deposit of prescribed fee. To what extent individual rights and access to information on oil and gas issues have been exercised was not determined during this CNA process.

Establishing and operationalizing the appropriate communication pathways will benefit the public, industry, and Government

The National Oil and Gas Policy (NOGP) for Uganda explicitly provides for the development and execution of a communication strategy for the oil and gas sector. The MEMD, in 2011, developed the National Communication Strategy for the Oil and Gas Sector in Uganda through a multistakeholder participatory process that involved MDAs, local government, media, CSOs, cultural institutions, oil companies and local communities (MEMD 2011). The Strategy was created to foster a coordinated approach to communication between these multiple actors in the sector and meet the information needs of the public through regular information dissemination, exchange and sharing. The Strategy describes the role of the relevant MDAs in oil and gas communications, such as MWE, UWA, PAU, and local governments, etc. One of its key objectives is to develop an implementation structure for the strategy that clearly defines actors' roles and responsibilities and harnesses synergies from the different communication efforts.

PAU also has developed a Corporate Communication Strategy and Plan, last reviewed in 2020, to ensure alignment with Uganda's new National Communication Strategy Plan (PAU 2023g). Its aims include increasing knowledge and understanding of the sector, with different players coming into the oil and gas communication space; preparing host communities for the potential impacts and opportunities from the sector; and developing strategic and mutually beneficial partnerships with key stakeholders. It seeks to achieve these through regular communication and engagement through social media, through joint communication and engagement forums such as the Government Communicators Forum⁶⁵, and through targeted communication including CSOs and NGOs. The Communications Strategy has been able to meet challenges related to low public awareness on issues related to oil and gas.

Uganda joined the Extractive Industries Transparency Initiative (EITI) in 2020 led by the Ministry of Finance Planning and Economic Development with a commitment to increase overall transparency in the extractives sector. The companies operating in the oil and gas sector have been part of and engaged in the EITI multistakeholder group meetings as industry participants (Uganda EITI 2022).

⁶⁵ Government Communicators Forum (GCOF) is a communications engagement framework in Uganda through which all Government communication teams undertake joint engagement with different stakeholders on development concerns (including oil and gas).

Key Issues

Participants involved in consultations for this report indicated several communication pathways that can be improved to provide accurate and unbiased information. As a good example, most ESIA documentation is available on both industry and Government websites. The next level below the ESIA is also generally available (e.g., management, monitoring, and control plans). However, some plans identified as relevant in the operator Environmental and Social Management Plan (ESMP) are not readily available: e.g., spill prevention plan, oil spill contingency plan, surface run off and drainage manage plan, physical environment monitoring plan, waste management and biodiversity/restoration plans, etc.). Full and open access to these documents would be helpful in addressing public concerns relating to transparency.

Sharing of these documents amongst MDAs involved with oil and gas activities also could be improved. Occupational Health and Safety Inspectors at MGLSD did not have access to the operators' environmental management plans and noted that regular monitoring report/data (for instance, on noise and air quality) should also be shared with them.

In some cases, required reports from industry consultants to UWA have been delayed raising concerns of industry transparency. Based on UNEP consultations with CSOs, local communities also experience a lack of communication and trust in the information disseminated by the project developers.

In addition, several representatives from CSOs and academic institutions expressed their wish to have access to field data (air, water, noise, biota surveys) which would enable them to independently verify the quality of data being reported by industry and Government, as well as enable them to also utilize data for scientific research. The need for addressing and providing avenues for dialogue on socio-economic issues related to land rehabilitation, cultural sites protection, conflicts with other livelihood sectors such as fisheries, revenue-sharing benefits to host districts, etc., was also raised by civil society organizations during this needs assessment process.

Ways Forward and Recommendations

- 10.1 Subject to legally recognised differentiated data access rights, ESIA documents, including management plans, CoA requirements and other related documents, as well as field and other compliance monitoring reports, should be made accessible internally and externally on a centralized Government website. NEMA already has an established ESIA online data management platform which is used internally by NEMA to track ESIA and permitting processes; consideration should be made to enable access by other key regulatory MDAs and DNROs/DEOs to enhance information sharing and coordination for environmental compliance monitoring. Differentiated access rights should also be made clear for public information and knowledge.
- 10.2 Public outreach should be pursued on a near continual basis. Where necessary, gender specialists and gender-sensitive NGO representatives should be on hand to steward the process. Follow up to the National Communications Strategy for the Oil and Gas Sector in Uganda should be undertaken involving the relevant MDAs, including an implementation structure for the strategy. A clear communication pathway should be established between PAU/MEMD to MDAs, local government and local communities and build synergies with academia and research organizations and industry to encourage public dialogue and to combat misperceptions brought about by poor communication. Regular means of information exchanges need to be defined, including hosting of public meetings, use of social media, and posting of reports and project updates.

FINDING 11:

New and increased multi-sectoral development activities and subsequent potential direct and cumulative impacts indicates need for a fresh or updated strategic environmental assessment for all affected districts.

Current Status

Even though the oil and gas sector in Uganda has seen major developments since the 2013 SEA, the overarching priorities from the 2013 SEA continue to be important, specifically related to:

- i. Petroleum activities in environmentally sensitive and protected areas.
- ii. Co-existence with other sectors and local communities.
- iii. Institutional framework and capacity.
- iv. Management of pollution and waste.

SEA recommendations on social development investments have been integrated into the National Development Plan (NDPII) and the identified environmental and socio-economic concerns are being addressed by the mandated institutions.⁶⁶

MEMD has been coordinating implementation of the 2013 SEA recommendations. Based on consultations and follow-up surveys conducted as part of this CNA assessment, a significant majority of the 2013 SEA recommendations have been implemented.

SEA recommendations that have not yet been implemented and/or remain ongoing, but are still relevant include:⁶⁷

- Review of the National Forest Policy to include oil and gas activities,
- Completion of the sensitivity atlases for protected areas,
- Economic valuation for other protected areas as planned under the Strategic Plan 2020 – 2024,⁶⁸
- Procedure of forest valuation to include forest values/services pending validation,
- Wetland specific law yet to be passed in Parliament,
- Ongoing reviews of fisheries regulations and rules to bring them in line with the recently passed Fisheries and Aquaculture Act 2023,
- Recommendations related to co-existence of archaeology and cultural heritage with oil and gas activities,
- National Air Quality Standards to be developed and finalized,
- Establish baseline of ambient air quality,
- Undertake air emission dispersion modelling for the refinery and IPP to understand the local meteorology and dispersion factors,
- Review of National Water Policy, National Water Act, and associated abstraction, use and discharge regulations to incorporate standards relating to oil and gas activities.

⁶⁶ MLGSD response to the SEA implementation matrix, last updated in September 2020.

⁶⁷ Based on the SEA implementation matrix 2020 and responses received to follow-up questionnaires shared with MDAs.

⁶⁸ The economic evaluation of ecosystem services has been completed by UWA for Semliki and Murchison Falls National Park.

Key Issues

The 2013 SEA called for an integrated management planning process to be put in place that incorporates sectoral development plans and strategies as a critical means for harnessing development co-benefits and mitigate adverse impacts of oil and gas activities. However, Government efforts have not been fully coordinated, and development of an Integrated Management Plan (IMP) for the Albertine Graben has not progressed meaningfully. A concept note describing the requirements and key elements of an IMP was drafted by the SEA team in April 2014. The terms of reference for the development of the IMP were later developed in 2019 but were not finalized. Nevertheless, the SEA Technical Implementation Committee in 2022 emphasized the need for integrating and coordinating the various multisectoral development plans that have been developed. This was seen as especially relevant for future petroleum activities that are yet to be licensed.

The 2013 SEA had less focus on gender issues especially with regards to differential impacts of oil and gas on women and men. There is low involvement of women in oil and gas related activities at the community level, which has been attributed to cultural and social norms on the role of women. Nonetheless, PAU has undertaken efforts towards gender mainstreaming in the sector by promoting women empowerment at community level through financial literacy training, sensitization, and awareness creation on gendered impacts to mitigate the inequality and other impacts. As per EITI 's Uganda 2020-2021 Report, women represent 35% of the workforce in the oil and gas sector (Uganda EITI 2022). The Women in Energy and Extractives Network (WEEN) was officially launched on May 11, 2023, serving as a platform dedicated to advancing gender integration within the Energy and Extractives Industry.

During consultation, CSOs as well as District officers noted increased vulnerability of women as a result of oil and gas activities. While there has been an increase in women being hired for casual jobs of cleaners and odd jobs in workers' camps, there has also been an expected increase in sexual exploitation and incidences of gender-based violence. It was also noted that women are more vulnerable to land use displacement and contracting of HIV/AIDs.

Additionally, although oil and gas activities will be primarily carried out onshore and unlikely to directly affect fisheries resources, the human influx into the region because of oil and gas development may increase strain on fish stocks. There are anecdotal reports of reduced fish catch, low turnover, and emerging conflicts between fishers of Uganda and DRC (MWE 2022).⁶⁹

Consultations with DNROs and DEOs also noted an increase in demand for public services in the oil districts with the influx of local and international personnel linked to oil exploration and production. For instance, Hoima has been experiencing increasing prices of commodities, increased waste generation in urban centres, and increased deforestation due to the demand for plywood. In response, District authorities in Hoima are now mandating reforestation activities for any new development projects. Despite the added public service demands, there is no commensurate increase in revenue for these districts.

Finally, the 2013 SEA did not yet anticipate opening of new licensed areas as well as other sector developments, including the EACOP and transboundary concerns. It also did not fully address Uganda's climate and biodiversity commitments, Uganda's energy transition policy, as well as greenhouse gas emissions reduction in the sector.

⁶⁹ Also see, Centre for Citizens conserving Environment and Management *et al.*, (2023). Open Letter Calling on Ministers of Environment Uganda and DRC to Avoid Oil Activities in Lake Albert.

Way Forward and Recommendations

The 2013 SEA served its immediate purpose of preparing the country for the initial phases of exploration and development of the oil and gas sector. However, in the decade that has since passed, events have overtaken the specific recommendations of the 2013 SEA and new policies and legislations have been enacted. As the country gears up for oil production in the post-2025 period, the environmental and related social needs for an updated SEA will only become even more pronounced.

In 2020, Uganda enacted the National Environment (Strategic Environmental Assessment) Regulations that places the obligation upon relevant MDAs to undertake an SEA for petroleum activities and mid-stream and downstream operations. These Regulations allow for the update of a pre-existing SEA.

11.1 Undertaking an update to the 2013 SEA process for Uganda's emerging petroleum sector with an expanded scope, considering current and future developments, including the planned crude oil refinery in Hoima, the EACOP and opening of new licensed areas, offers an opportunity to consolidate various studies, address remaining challenges in integrated planning and co-existence between sectors in the region, and reflect Uganda's climate change and biodiversity commitments.

It would also be important for this SEA update to consider the indirect and cumulative impacts of oil and gas development, which also integrates transboundary issues, and address the unintended socio-economic issues that have arisen due to oil and gas activities. Several management plans and issue focused assessments have already been conducted or are ongoing, which may be used to support the SEA update process.⁷⁰

This updated SEA process may consider greater focus on:

- The role the sector would play in meeting Uganda's climate and biodiversity commitments and alignment with its energy and transition policies.
- Cumulative assessment to identify and anticipate the overlapping impacts of multiple sectors on the same geographical area.
- Strengthening transboundary cooperation on ecologically sensitive Albertine Graben ridge.
- Socio-economic, including cultural heritage, and governance issues raised by greater development activities into the oil and gas districts.
- Gender-differentiated impacts of land-use changes and access to natural resources, local content law and equal access to employment opportunities ensuring that both men and women are represented at all levels.
- Collecting and analysing gender-disaggregated data to identify patterns and trends related to SEA. This information can inform prevention strategies and targeted interventions to address gender-related risks (OECD 2015).

⁷⁰ Physical Development Plan for the Albertine Graben 2014, the Albertine Graben Environmental Monitoring Plan 2012-2017, National Physical Development Plan 2022, Bunyoro Integrated Affirmative Development Plan 2016-2021, Social Development Plans, the Albertine Graben Sensitivity Map, and the Semliki National Park Sensitivity Map.

08

Way Forward



As the country gears up for oil production in the post-2025 period, the environmental and related social needs for an updated SEA will only become even more pronounced

The emerging oil and gas sector in Uganda necessitates the strengthening of institutional capacities required to enable the Government to effectively exercise its mandates, roles and responsibilities in environmental due diligence and oversight. Uganda will need to develop a long-term capacity development strategy and programme for its MDAs. Annex G provides a list of potential partners in Uganda with whom Government institutions have collaborated/ are collaborating to strengthen environmental governance and management in the oil and gas sector.

The next steps in taking forward the CNA recommendations typically would include the following:

1. Disseminate the final CNA Report to relevant institutions as well as sub-national Government officials.
2. Review the recommendations and reach consensus on a prioritized list of recommendations.
3. Agree on 'owner' institutions to implement each of the prioritized recommendations.
4. 'Socialize' the recommendations within institutions through internal awareness raising activities and dialogue.
5. Meet with and/or convene capacity development fora with relevant development partners (including from private sector) to support implementation of the prioritized recommendations.

A first attempt at prioritization of recommendations and identifying the issue owners was already undertaken at the technical segment of the National Validation Meeting planned in November 2023, as part of the finalization of this report. Further discussions among the key MDAs on the above listed steps are necessary as follow-up steps to carry forward the implementation of the recommendations put forth in this report.



Hoima Town March 2023.
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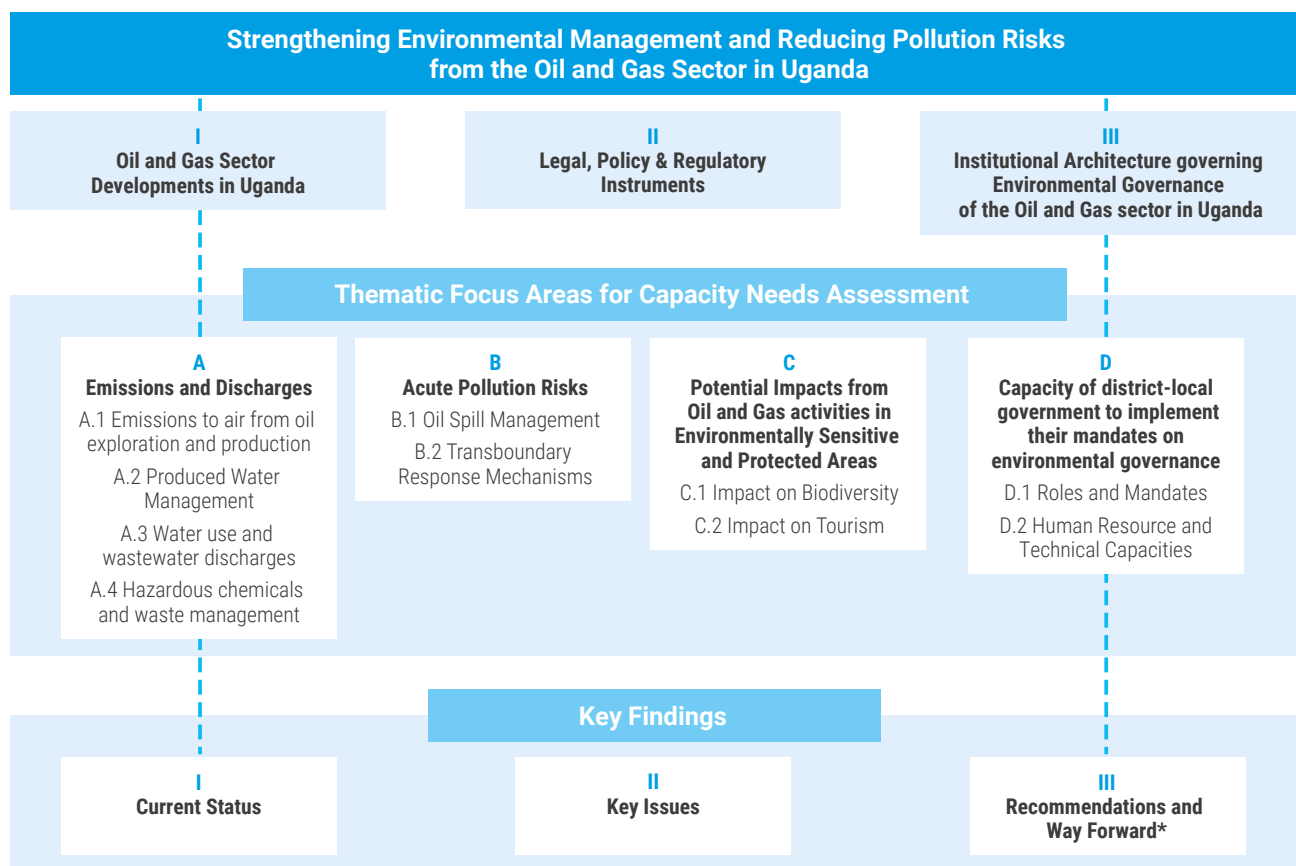


En route from Hoima to Murchison Falls National Park March 2023.
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Annexes

A. Analytical Framework used in the update of the CNA Report

Figure A1: Analytical Framework used in the update of the CNA Report.



*stakeholder prioritized implementation plans

B. Scope and Methodology

In 2013, the Government of Uganda, with support from Norway's Oil for Development Programme, commissioned a Strategic Environmental Assessment (SEA) of oil and gas activities in the Albertine Graben (also known as the Lake Albert Basin), located in the western part of Uganda. The SEA was jointly undertaken by the Ministry of Energy and Mineral Development (MEMD) and Ministry of Water and Environment (MWE). The purpose of the SEA was to undertake a holistic review of the physical environment, cultural heritage, as well as socio-economic issues that may arise because of current and future oil and gas activities in the Albertine Graben, and thus enable the Government to consider the identified issues while making Policies, Plans and Programs in the petroleum sector. The SEA analyzed the main challenges and made recommendations which were required to be integrated into national development planning. Many of the issues identified were cross-cutting and their implementation required concerted action from all the relevant Government Ministries, Departments and Agencies (MDAs).

In 2015, the Cabinet of Uganda formally adopted the SEA recommendations and approved the proposed implementation arrangements, which established a 3-tier SEA Multi-Institutional Implementation Committee responsible for the implementation of the SEA recommendations, to be Chaired by the Ministry of Energy and Minerals Development (MEMD). In January 2017, the Chair of the Technical Tier of the SEA Multi-Institutional Implementation Committee requested UNEP to undertake a Capacity Needs Assessment (CNA) of Government MDAs which are represented in the Committee, to inform how best to advance implementation of the SEA recommendations.

In 2017, UNEP, in collaboration with the Government of Uganda and support from Norway's Oil for Development (OfD) Programme, carried out an institutional capacity needs assessment (CNA) on environmental management in Uganda's upstream oil and gas sector in 2017.

The CNA had the following objectives:

- To prepare a baseline analysis of the key institutions and legal and regulatory frameworks which are relevant for managing environmental issues associated with the oil industry.
- To identify key gaps between the existing institutional capacities and international best practices to deal with the emerging challenges of managing oil exploration and production.
- To identify the key capacity building efforts needed to ensure effective environmental oversight and management of oil exploration and production, and in particular implementation of the recommendations of the Strategic Environmental Assessment (SEA) conducted in 2013 for the Albertine Graben region.

The 2017 CNA was intended to assess progress against implementation of the recommendations of the SEA, as well as provide a strategic understanding of the environmental management capacities in respective Government institutions which would be engaged in oil and gas development activities. A final draft of the CNA was shared with Government stakeholders for review and comments in November 2017.

In the final phase of the OfD country programme in Uganda, UNEP proposed to revisit the key findings and recommendations of the 2017 CNA report and support an updated review of the current capacity development priorities related to environmental management, considering the present (2023) context of oil and gas development and other emerging priorities in Uganda.

The purpose of finalizing the CNA report is to support the Government of Uganda in prioritizing capacity challenges and to provide the Government with a strategic document or “roadmap” for institutional capacity development to strengthen environmental governance and management, particularly as Uganda moves towards extensive oil and gas production.

UNEP commenced this update process virtually in May 2022 with a national kick-off meeting, and subsequently undertook several online consultations with the SEA Technical Implementation Committee as well as with civil society organizations and academia in August 2023. These initial consultations revealed that the 2017 CNA findings and recommendations continue to be relevant. At the same time, new significant infrastructure developments are taking place in oil and gas fields in the Albertine Graben region, which may pose potential new risk and concerns. In this context, the Government requested that UNEP undertake in person consultation meetings and field visits, due to internet connectivity constraints faced in most MDAs.

UNEP organized a planning mission to Kampala, Uganda in January 2023 to discuss the scope and implementation plan for finalizing the 2017 CNA Report. During this mission, the four thematic pillars that will form the basis of the CNA update were agreed upon: emissions and discharges, acute pollution risks, potential impacts on biodiversity from oil and gas activities in environmentally sensitive and protected areas, and a stronger focus on current mandates and roles of district environmental officers related to oil exploration and production, given the increasing demands for environmental oversight at field level.

A follow-up fact-finding mission was undertaken from 20 March to 01 April 2023 to conduct focused group consultations with Government institutions, academia, civil society organizations, and other key stakeholders, and undertake a field visit to a Tilenga Project drilling pad in the Murchison Falls National Park.

UNEP conducted the CNA update process in the following phases:

1. Virtual consultation meetings with Government and non-Government stakeholders
2. Desk review of relevant legal and policy developments since 2017
3. In-country scoping mission for finalizing the scope of the CNA update process
4. Multistakeholder consultations during extended fact-finding mission with on-site consultations and field visits (March 2023)
5. Follow-up virtual bilateral meetings and survey questionnaires for additional information. (May – August 2023)
6. Preparation of initial draft key findings of the assessment (May 2023)
7. Submission to the Core SEA team supporting the CNA update for comments (June 2023)
8. Development of a full draft report for review by the Core SEA team (September 2023)
9. Share the revised draft with all stakeholders consulted for comments (October 2023)
10. Validation and finalization of the report (November 2023)

Limitations of the CNA Update

The scope of this CNA report update purposefully does not include the on new fields opened for exploration, the East Africa Crude Oil Pipeline (EACOP), or the crude oil refinery awaiting construction in the Hoima District. This was intentional, bearing in mind the limited time and human resources required to further expand the scope of the assessment. The UNEP team mainly focused on the oil fields which are currently under development: Kingfisher project alongside Lake Albert and Tilenga project in Murchison Falls National Park and adjacent areas to the south. However, the UNEP team has included references to these new/other developments, when raised as a critical issue by stakeholders in the context of discussing the four main thematic areas of concern covered by the CNA process. UNEP recommends that further assessment into these new project activities be covered under a new SEA process, as discussed under the Key Findings and Recommendations section of the main report.

With regards to data documentation and gathering, UNEP was unable to solicit responses to follow-up surveys from all MDAs identified in the SEA Implementation Matrix and for the updated CNA spider chart. Follow-up survey responses were received only from MWT, MFA, PAU, UWA, MAAIF, DNRO Buliisa and DNRO Nwoya. No responses were provided to questionnaires sent to MLHUD, OPM, MGLSD, MEMD, MWE, NFA, UNRA, MTWA and DNRO Hoima. The analysis provided in the report relating to the latest status of SEA implementation is therefore limited by the scope of answers received from the MDAs who responded to the surveys.

Another area which was not fully assessed by UNEP were the broader social development dimensions associated with the emerging oil and gas sector in Uganda, including considerations with regards socio-economic opportunities for women across the sector and associated sectors, as well as gender-differentiated vulnerabilities linked to the sector. However, some of these gender related issues have been flagged under the Key Findings and Recommendations section in the main report. Additionally, potential indirect and cumulative social and environmental impacts could not be assessed fully as part of this CNA update process. UNEP has recommended that these issues be given greater depth in a new SEA process.

C. Legal Policy Review Checklists for Environment and Oil and Gas in Uganda

Table A1: Policies relevant to the oil and gas sector.

LEGEND Available Available but under review Draft status/in process of formulation Not Available

Thematic Area/Scope	Title of Policies, Plans and Strategies related to environment and natural resources management and oil and gas in Uganda	Year	Status
Oil Governance	Energy Policy for Uganda	2002	
	National Oil and Gas Policy/National Petroleum Policy	2008	
	Oil and Gas Revenue Management Policy	2012	
	National Content Policy for the Petroleum Subsector in Uganda	2018	
	The Programme Implementation Action Plan (PIAP) for the Sustainable Development of Petroleum Resources Programme	2021/22–2024/25	
Environment/Biophysical	National Environmental Action Plan	1994	
	National Forestry Policy	2001	
	National Water Policy	1999	
	National Fisheries Policy	2004	
	National Fisheries and Aquaculture Policy	2018	
	National Environment Management Policy	1994	
	National Policy for the Conservation and Management of Wetland Resources	1995	
	National Forest Policy	2000	
	Uganda National Land Policy	2013	
	Uganda National Climate Change Policy	2015	
	Uganda Wildlife Policy	2014	
	National Biodiversity Strategy and Action Plan II (2015–2025)	2015	
	The Programme Implementation Action Plan (PIAP) for the Environment, Natural Resources, Climate Change and Land Management Programme	2020/21–2024/25	
	National Forest Plan	2013	

Thematic Area/Scope	Title of Policies, Plans and Strategies related to environment and natural resources management and oil and gas in Uganda	Year	Status
Environment/Biophysical (continued)	Strategic Environmental Assessment (SEA) for the Albertine Graben	2013	
	Environmental Sensitivity Atlas for the Albertine Graben	2009	
	Strategic Plan for the North Albertine Rift of Uganda, 2011-2020	2011	
	Uganda Green Growth Development Strategy, 2017/18 – 2030/31	2017	
	Uganda Second National Development Plan (NDPII) 2020 -2025	2020	
	Uganda Wildlife Authority Strategic Plan 2013–2018	2013	
	The Environmental Monitoring Plan for the Albertine Graben	2012–2017	
Other Socio-Economic	Land Acquisition, Resettlement and Rehabilitation Policy	2019	
	Albertine Graben Land Acquisition and Resettlement Framework	2016	
	Physical Development Plan for the Albertine Graben	2015	
	National Population Policy for Social Transformation and Sustainable Development	2008	
	Museums and Monuments Policy	2015	
	The Uganda National Policy on HIV/AIDS	2007	
	Uganda Gender Policy	2007	
	Uganda National Culture Policy	2006	
	Uganda National Land Policy	2013	
	Albertine Graben Physical Development Plan	2015	
Disaster Management	National Policy for Disaster Preparedness and Management (revised)	2011	

Table A2: Legislation relevant to the oil and gas sector.

LEGEND Available Available but under review Draft status/in process of formulation Not Available

Relevant Laws, Regulations and Strategic Plans	Status	Full title of legal instrument in Uganda	Responsible Authorities
Constitutional Provisions		Constitution of the Republic of Uganda, 1995	Parliament
Framework Environmental Act		National Climate Change Act 2021	NEMA
		Local Government Act 1997	MLG
Framework Oil and Gas Act		Petroleum (Exploration, Development and Production) Act 2013	MEMD
		Petroleum (Refining, Conversion, Transmission and Midstream Storage) Act No. 4, 2013	MEMD
		Petroleum Supply Act 2003	MEMD
Framework on Water Resource Management		Water Act (Cap 152 of the Laws of Uganda)	MWE
		The Water Resources Regulations (S 152-1)	MWE
		The Wastewater Regulations 1998	MWE
		Integrated Water Resources Management Plan for the Albertine Graben	MWE
Framework Act on Disaster Management		Draft Disaster Bill developed	OPM
		National Environment Act 2019	NEMA
Frameworks on Health, Safety and Environment		Workers' Compensation Act, Cap 225	MoGLSD
		Occupational Safety and Health Act, 2006	MoGLSD
		Public Health Act, Cap 281	MoH
Frameworks on Gender, HIV and other Vulnerable Groups		Equal Opportunities Act 2007	MoGLSD
Framework on Land Use Planning		Land Acquisition Act (Cap 226 of the Laws of Uganda) 1965	MLHUD
		Land Act (Cap 227 of the Laws of Uganda, as amended in 2010)	MLHUD
		National Environment Act 2019	NEMA
Framework on Land Acquisition (including Resettlement)		Physical Planning Act No. 8, 2010	MLHUD
		Land Acquisition Bill	MLHUD
Framework on Protected Areas		National Environment (Wetlands, Riverbanks and Lakeshores Management) Regulations, 2000 (SI No. 153-5)	MWE
		Uganda Wildlife Act 2019	UWA
		National Forestry and Tree Planting Act 2003	MWE
		National Environment Act 2019	NEMA

Relevant Laws, Regulations and Strategic Plans	Status	Full title of legal instrument in Uganda	Responsible Authorities
Regulations on Protection of Biodiversity		National Environment Act 2019	NEMA
		Wildlife Act 2019	UWA
		Biodiversity Offset Guidelines to address Residual Impacts of Developments in Sensitive Ecosystems	UWA
		National Biodiversity and Social Offset Guidelines for Uganda	MWE
		National Environment Management of Hilly and Mountainous Areas Regulations 2000	MWE
Regulations on Strategic Environmental Assessment		Guidelines for Strategic Environmental Assessment 2020	NEMA
		National Environment (Strategic Environmental Assessment) Regulations 2020	NEMA
Regulations on Environmental Impact Assessment (including resettlement)		National Environment (Environmental and Social Impact Assessment) Regulations, 2020 (SI No. 143)	NEMA
		Guidelines for Environmental Impact Assessment in Uganda 1997	NEMA
		Environmental Impact Assessment Guidelines for the Energy Sector 2004	NEMA
		Environmental and Social Impact Assessment Guidelines for the Energy Sector in Uganda 2014	NEMA
		Environmental Impact Assessment Guidelines for Water Resources Related Projects in Uganda 2011	MWE
		Regulations and Guidelines for EIA in forest developments	NFA
Regulations on Audits and Inspections		National Environment (Audit) Regulations, 2020 (SI No. 47 of 2020)	NEMA
Regulations on Water Pollution		National Environment (Standards for Discharge of Effluent into Water or on Land) Regulations (SI No 144) 2020	NEMA
		Water (Waste Discharge) Regulations, 1998 (SI No. 152-4)	NEMA
		Framework and Guidelines for Water Source Protection 2013	MWE
Regulations on Waste Management (municipal waste/solid/liquid)		National Environment (Waste Management) Regulations, 2020 (SI No. 49), Water (Waste Discharge) Regulations, 1998	NEMA MWE
Regulations on Hazardous Waste Management		Petroleum (Waste Management) Régulations 2019 (SI No. 3)	NEMA
		Operational Waste Management Guidelines for Oil and Gas Operations 2012	NEMA

Relevant Laws, Regulations and Strategic Plans	Status	Full title of legal instrument in Uganda	Responsible Authorities
Regulations on Petroleum Management		Petroleum (Refining, Conversion, Transmission and Midstream Storage) (National Content) Regulations, 2016 (SI No. 34 of 2016)	PAU
		Petroleum (Exploration, Development and Production) Regulations, 2016	MEMD
		Petroleum (Refining, Conversion, Transmission and Midstream Storage) (Health, Safety and Environment) Regulations, 2016 (SI No. 35 of 2016)	MEMD
		Petroleum (Refining, Conversion, Transmission and Midstream Storage) (Decommissioning) Regulations	MEMD
		Petroleum (Refining, Conversion, Transmission and Midstream Storage) (Metering) Regulations	MEMD
		Petroleum (Refining, Conversion, Transmission and Midstream Storage) Regulations, 2016 (SI No. 36 of 2016)	PAU
		Petroleum (Exploration, Development and Production) (HSE) Regulations, 2016 (SI No. 46)	PAU
		Petroleum (Exploration, Development and Production) (Metering) Regulations, 2016	PAU
		Petroleum (Exploration, Development and Production) (National Content) Regulations, 2016	PAU
		National Local Content Act 2022	PAU
Regulations on Chemicals Management		National Environment (Management of Hazardous Chemicals and Products Containing Hazardous Chemicals) Regulations, 2014 (Draft)	NEMA
Regulations on Soil Management/Pollution		National Environment (Minimum Standards for Management of Soil Quality) Regulations, 2001 (SI No. 59 of 2001)	NEMA
Regulations on Air Pollution		Draft National Environment (Air Quality) Regulations	NEMA
Regulations on Carbon Dioxide Environmental Quality Standards for Soil		National Environment (Minimum Standards for Management of Soil Quality) Regulations, 2001 (SI No. 59 of 2001)	NEMA
Regulations on Noise Pollution/Vibrations		National Environment (Noise and Vibrations) (Standards and Control) Regulations, 2013	NEMA
		National Environment (Noise Standards and Control) Regulations, 2003 (SI No. 30 of 2003)	NEMA
Regulations on Oil Spill Management		National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020	NEMA
		National Oil Spill Contingency Plan 2020	OPM

Relevant Laws, Regulations and Strategic Plans	Status	Full title of legal instrument in Uganda	Responsible Authorities
Regulations on Decommissioning and Abandonment of Oil and Gas infrastructure		Petroleum (Exploration, Development and Production) Act 2013	PAU
Regulations on Operating within Protected Areas		Operational Guidelines for Developments in Wildlife Protected Areas 2020	PAU
Regulations on Drilling Fluids and Cuttings		Petroleum (Exploration, Development and Production) Act 2013	PAU
Rules on Produced Water Disposal		National Environment (Standards for Discharge of Effluent into Water or Land) Regulations, 2020	MWE
		Water (Waste Discharge) Regulations, 1998	
Rules on Use of Radioactive Sources in Oil Industry		Atomic Energy Act, 2008 (Act No. 24 of 2008)	Atomic Energy Council, MEMD
Rules on Community Consultations		National Environment Act 2019	NEMA
		National Communications Strategy for the Oil and Gas Sector in Uganda 2011	MEMD
Rules on Use of Dispersants		National Oil Spill Contingency Plan 2020	OPM
		National Environment (Oil Spill Prevention, Preparedness and Response) Regulations 2020	NEMA
Rules on Disposal of Disaster Wastes/Debris Management		National Oil Spill Contingency Plan 2020	OPM
Environmental Quality Standards for Water		Framework and Guidelines for Water Source Protection 2013	MWE
Environmental Quality Standards for Air		National Environment (Air Quality) Regulations	NEMA
Regulations on Air Emissions, in particular GHG/Methane emissions		Uganda Second National Development Plan (NDPII) 2015/16–2019/20, 2015	MWE
		National Environment (Air Quality) Regulations	NEMA

Table A3: Typical legal provisions needed to support environmental management in the oil and gas sector, based on international best practice.

LEGEND Available Available but under review Draft status/in process of formulation Not Available

Typical legal provisions needed to support environmental management in the oil and gas sector, based on international best practice	Status	Full title of legal instrument	Responsible Authorities
Pollution control and operator's duty to take measures to prevent, stop and remove pollution		National Environment Act 2019	NEMA
		National Environment (Oil Spill Prevention, Preparedness and Response) Regulations 2020	NEMA
		Petroleum (Exploration, Development and Production) Act 2013	PAU, MEMD
		National Oil Spill Contingency Plan 2020	OPM
Environment management system (operator)		National Environment Act 2019	NEMA
		National Environment (Audit) Regulations, 2020	NEMA
Sensitivity mapping		National Environment Act 2019	NEMA
Seismic surveys		Petroleum (Exploration, Development and Production) Act 2013	PAU, MEMD
		Petroleum (Exploration, Development and Production) Regulations, 2016	PAU, MEMD
Risk assessments and risk reduction		National Environment Act 2019	NEMA
		National Environment (Environmental and Social Assessment) Regulations, 2020	NEMA
		National Environment (Oil Spill Prevention, Preparedness and Response) Regulations 2020	NEMA
		Petroleum (Refining, Conversion, Transmission and Midstream Storage) (Health, Safety and Environment) Regulations, 2016 (SI No. 35 of 2016) (under review)	PAU, MEMD
		Petroleum (Exploration, Development and Production) Act 2013	PAU, MEMD
Environmental assessment of chemicals		National Environment (Management of Hazardous Chemicals and Products Containing Hazardous Chemicals) Regulations 2014 (draft)	NEMA
		National Environment Act 2019	NEMA
Use, storage, and discharge of chemicals		National Environment Act 2019	NEMA
		National Environment (Management of Hazardous Chemicals and Products Containing Hazardous Chemicals) Regulations 2014 (draft)	NEMA
Flaring and venting		Petroleum (Exploration, Development and Production) Act 2013	PAU, MEMD
		National Environment Act 2019	NEMA
Community access to areas of operation		Petroleum (Exploration, Development and Production) Act 2013	PAU, MEMD

Typical legal provisions needed to support environmental management in the oil and gas sector, based on international best practice	Status	Full title of legal instrument	Responsible Authorities
Transportation (roads/pipelines/boats)		Uganda National Roads Authority Act, 2006	UNRA
		Rivers Act (Cap 357 of the Laws of Uganda)	MWE
		Roads Act (Cap 358 of the Laws of Uganda)	UNRA
		Petroleum (Refining, Conversion, Transmission and Midstream Storage) Regulations, 2016 (SI No.36 of 2016)	PAU, MEMD
Maintenance of oil and gas installations		Uganda Wildlife Authority Operational Guidelines for Developments in Wildlife Protected Areas 2020	UWA
		Petroleum (Exploration, Development and Production) Act 2013	PAU, MEMD
Energy use and production		Petroleum (Exploration, Development and Production) Act 2013	PAU, MEMD
Formation testing, drill stem testing		Petroleum (Exploration, Development and Production) Act 2013	PAU, MEMD
Environmental monitoring – baseline		National Environment Act 2019	NEMA
		National Environment (Standards for Discharge of Effluent into Water or Land) Regulations, 2020	NEMA
Environmental monitoring – of acute pollution		National Environment Act 2019	NEMA
		National Environment (Oil Spill Prevention, Preparedness and Response) Regulations 2020	NEMA
		National Environment (Standards for Discharge of Effluent into Water or Land) Regulations, 2020	NEMA
		Environmental Guidelines to Local Government for Strengthening Compliance with Safeguard Requirements in Development Projects, 2020	MWE
Environmental Data Management and Coordination of data		National Environmental Act 2019	NEMA
Oil and Gas treatment/separation/processing		Petroleum (Refining, Conversion, Transmission and Midstream Storage) (National Content) Regulations, 2016 (SI No. 34 of 2016)	PAU, MEMD
		Petroleum (Refining, Conversion, Transmission and Midstream Storage) Regulations, 2016 (SI No. 36 of 2016)	PAU, MEMD
Decommissioning/abandonment		Petroleum (Exploration, Development and Production) Act 2013	PAU, MEMD
Liability and Damages/Compensation		Petroleum (Exploration, Development and Production) Act 2013	PAU, MEMD
Production Sharing Agreements/Arrangements		Petroleum (Exploration, Development and Production) Act 2013	PAU, MEMD

Table A4: Multilateral Environmental Agreements adopted into Ugandan laws.

LEGEND Yes No Not ratified/Not applicable

Multilateral Environmental Agreement	Entry into Force	Ratification/Accession	Adoption into National Laws (Yes/No)
United Nations Framework Convention on Climate Change (UNFCCC) 1992	1994	2005	
Protocol to the United Nations Framework Convention on Climate Change (Kyoto Protocol) 1997	2005	2005	
Paris Climate Accord 2015	2016	2016	
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal 1989	1992	1999	
Convention on Biological Diversity 1992	1992	1993	
Cartagena Protocol on Biosafety to the Convention on Biological Diversity 2000	2003	2003	
Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety	2010	2010	
Rotterdam Convention on the Prior Informed Consent Procedure 1998	2004	2008	
Stockholm Convention on Persistent Organic Pollutants 2001	2004	2004	
United Nations Convention to Combat Desertification 1994	1996	1997	
Montreal Protocol on Substances that Deplete the Ozone Layer 1987	1989	1988	
Vienna Convention for the Protection of the Ozone Layer 1985	1988	1988	
Convention on International Trade in Endangered Species of Wild Fauna and Flora 1973	1975	1991	
Minamata Convention on Mercury 2013	2017	2019	
International Convention for the Prevention of Pollution from Ships (MARPOL) and Protocols 1973	1983	Not ratified	
Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety 2010	2018	2014	
African Convention on the Conservation of Nature and Natural Resources (revised), 2003	2016	2003	
Convention on the Conservation of Migratory Species of Wild Animals 1979	1986	2000	
Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA), June 1995	2000	2000	

Multilateral Environmental Agreement	Entry into Force	Ratification/ Accession	Adoption into National Laws (Yes/No)
Ramsar Convention on Wetlands of International Importance 1971	1975	1998	
UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage 1972	1975	1987	
Convention for the Safeguarding of the Intangible Cultural Heritage, October 2003	2006	2009	
UN Convention on the Law of the Sea 1972	1994	1990	
Agreement on the Nile River Basin Cooperative Framework 2010	-	2019	
Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa, January 1991	1998	1998	
Prevention of Marine Pollution by Dumping of Wastes and Other Matter	1975	Not ratified	
International Convention on Oil Pollution Preparedness, Response and Co-operation 1990	1990	Not ratified	
Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (1972, revised 1996)	2006	Not ratified	
International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004	2017	Not ratified	

D. Institutional Architecture for Environmental Governance and Management in the Oil and Gas Sector

Uganda's administrative structure is a decentralized system that consists of multiple levels of government. At the top is the central Government, headed by the President, who is both the Head of State and the Head of Government. The central Government is responsible for national-level policymaking, legislation, defense, and foreign affairs. It comprises various ministries and government departments that oversee specific areas of governance, such as finance, health, education, agriculture, and infrastructure.

Below the central Government, Uganda is divided into administrative regions, which are further subdivided into districts. Currently, Uganda has 135 districts and 10 cities, each headed by a locally elected District Chairperson and a Mayor respectively. Districts are responsible for implementing national policies and delivering public services at the local level. They have their own administrative structures, including district councils and various departments responsible for sectors like health, education, agriculture, environment and natural resources, and local infrastructure development.

At the lowest level of administration are sub-counties and municipalities. Sub-counties are headed by Sub-County Chairpersons, while municipalities have elected Mayors. These local government units oversee service delivery and development initiatives at the grassroots level, working closely with communities to address their specific needs.

Uganda's administrative structure also incorporates the participation of traditional institutions, such as cultural leaders and local councils at the village level. These institutions play a role in community governance and decision-making processes, particularly in matters related to culture, heritage, and local disputes. The decentralization of power and resources to local governments is a key feature of Uganda's administrative structure. It aims to promote participatory governance, improve service delivery, and ensure that decision-making processes consider the needs and aspirations of local communities.

Uganda's environmental governance architecture encompasses various institutions, policies, and regulations that are responsible for managing and protecting the country's natural resources and addressing environmental challenges. These institutions are outlined below:

The **Ministry of Water and Environment (MWE)** has the mandate to initiate legislation, policy formulation, setting standards, inspections, monitoring, and coordination and back up technical support in relation to water and environment sub sectors. The Directorate of Water Resources Development (DWRD) at MWE issues water permits for any use of water or construction on water bodies. The DWRD also issues ground water and surface water, and wastewater discharge permits and undertakes their compliance monitoring. The main role of the Ministry in relation to oil and gas is to ensure that oil and gas activities conform to the requirements of the policies, regarding the protection and utilization of water and environment resources.

The **National Environment Management Authority (NEMA)** is the principle environmental agency in Uganda responsible for the management of the environment by coordinating, monitoring, regulating, and supervising all activities in the field of the environment. NEMA grants the Certificates of Approval at the end of (ESIA) process, waste transport and treatment licenses, pollution licenses, hazardous chemical licenses, and wetland resource use permits, among others. While NEMA is the principle environmental agency, other lead agencies are also empowered to perform their duties relating to environmental management as prescribed by the relevant laws. NEMA also acts as the appellate body for persons aggrieved by decisions made by lead agencies, technical committees or public officers who have been delegated functions by NEMA. The National Environment Act 2019 empowers NEMA to require lead agencies to report and account for the execution of their mandates in relation to environmental management.

The **National Forestry Authority** (NFA) of Uganda is in-charge of managing the Central Forest Reserves on a sustainable basis and for ensuring supply of high-quality forestry-related products and services to Government, local communities, and the private sector.

The **Ministry of Energy and Mineral Development** (MEMD) holds the mandate to establish, promote the development, strategically manage, and safeguard the rational and sustainable exploitation and utilization of energy and mineral resources for social and economic development. MEMD is the licensing authority for exploration and production licenses.

The **Petroleum Authority of Uganda** (PAU) is the principal regulatory authority for petroleum activities in Uganda. It has the mandate to monitor and regulate the exploration, development, and production, together with the refining, gas conversion, transportation and storage of petroleum in Uganda. This includes ensuring that petroleum operations in Uganda are carried out in accordance with the relevant laws, regulations, guidelines and in line with international best practice for the petroleum industry.

The **Ministry of Foreign Affairs** (MFA) is the ministry in-charge of implementing and managing Uganda's Foreign Policy, including any international and transboundary cooperation on oil and gas issues. It carries out due diligence on foreign oil exploration companies wishing to acquire exploration licenses in Uganda.

The **Ministry of Tourism, Wildlife and Antiquities** (MTWA) holds the mandates to promote tourism, ensure the preservation and welfare of wildlife, and the preservation, improvement and safekeeping of natural and other national historic sites and monuments, and to enhance Uganda as a preferred tourist destination, with accelerated sector contribution to the national economy. Issues related to cultural heritage also fall under the purview of MTWA.

The **Uganda Wildlife Authority** (UWA) is the statutory authority under MTWA vested with the power to ensure sustainable management of wildlife resources and supervise wildlife activities in Uganda both within and outside the protected areas. UWA has the duty to protect people including oil and gas workers from wildlife. UWA is the responsible authority that grants permission to project developers to initiate oil and gas activities in protected areas.

The **Department of Disaster Preparedness and Management** at the Office of the Prime Minister (DDPM-OPM) is the Government agency responsible for enhancing the country's capacity to contain and minimize the effects of disasters, address disaster vulnerabilities of the community and alleviate human suffering from disasters. It is also responsible for coordinating the development of capacities for prevention, preparedness, and response to natural and human induced disasters.

The **Ministry of Gender, Labour and Social Development** (MGLSD) holds the mandate to empower communities to harness their potential through skills development, labour productivity and cultural growth for sustainable and gender responsive development. The Directorate of Labour, Employment and Occupational Health and Safety conducts statutory inspections of workplaces to ensure that the safety and health measures are put in place to protect workers from industrial accidents and occupational diseases and non-observance of the working conditions.

The **Ministry of Agriculture, Animal Industry and Fisheries** (MAAIF) is mandated to work on the enhancement of crop production and productivity, in a sustainable and environmentally safe manner, for improved food and nutrition security, employment, widened export base and improved incomes of the farmers.

The **Ministry of Housing, Land and Urban Development** (MHLUD) is in-charge of ensuring the sustainable and effective use and management of land and orderly development of urban and rural areas as well as safe, planned, and adequate housing for socio-economic development. The MHLUD develops the National Physical Development Plans that lay down national land use zones and restrictions.

The **Ministry of Local Government** (MLG) guides, harmonizes, mentors and advocates for all local governments in Uganda. The decentralized structures of government in Uganda fall under the MLG.

The **Ministry of Works and Transport** (MWT) has the mandate to provide the highest possible level of an economic, efficient, and effective transport and engineering works infrastructure in the country, and **Uganda National Roads Authority** (UNRA) is the statutory body under it. UNRA carries out compliance monitoring of approval ESIA certificates for road construction.

E. UNEP Proposed Capacity Building Plan for MDAs

Based on the main findings of the CNA, UNEP has proposed the following core training programmes which will be needed to support institutional mandates, roles and responsibilities in the area of strengthening environmental governance and management in the petroleum sector. UNEP has also identified those trainings that will be valuable for enhancing capacities at the District government level, and should include districts that are involved in the EACOP, crude oil refinery, and other potential new areas for exploration and development.

Training Programs	MWE	NEMA	NFA	MEMD	PAU	MTWA	UWA	MAAIF	MGLSD	MLHUD	MLG	MOD	MOIA	MFA	MWT	UNRA	MFPED	MOJ	OPM
Foundation Course on Environmental Management of Upstream Oil and Gas Activities																			
ESIA Requirements, Process and Responsibilities																			
Produced Water, Chemicals and Waste Management																			
Environmental Compliance, Monitoring and Site Inspection																			
Oil Spill Response Management																			
Emergency Response Management (other than oil spills)																			
Worker Health and Safety (12 Golden Rules)																			
First Responder																			

1. Environmental Management of Upstream Oil and Gas Activities

WHY:

- To provide training to those not being acquainted with oil and gas development in Uganda and the role of Government oversight.
-

COURSE ELEMENTS:

- Status of lease areas and oil and gas activities.
 - A description of oil type.
 - A review of primary company operations, particularly those that may impact the environment.
 - Drilling, production, transport, pipelines, storage, etc.
 - The role of the ESIA process to mitigate or reduce potential impacts.
 - Environmental, Social and Health Management Plans
 - Emergency preparedness and the NOSCP.
 - A review of oil type and potential movement when spilled.
 - Monitoring, inspections and audits.
 - Carbon reporting.
-

RECIPIENTS:

- MDAs involved with the review of oil and gas activities.
- District personnel (referred to above as MLG).
- MDAs requiring knowledge of ongoing oil and gas operations for planning or other purposes.
- Civil Society Organizations.

2. ESIA Requirements, Process and Responsibilities

WHY:

- MDAs (Districts in particular) have requested further training on ESIA review.
 - To provides required information to new MDA officials that become involved in the oil and gas sector.
-

COURSE ELEMENTS:

- Why do an ESIA?
 - Requirements and components of the ESIA.
 - The Government review process.
 - MDA involvement, organization, time requirements, public disclosure and comments, etc.).
 - Company response to Government review.
 - Finalization of the ESIA and public disclosure.
 - Certificates of Approval (CoA)
-

RECIPIENTS:

- MDAs involved with the review of oil and gas activities.
- District personnel.
- Civil Society Organizations.

3. Produced Water, Chemicals and Waste Management

WHY:

- To provide detailed information regarding the origin, transport, storage, and treatment (as needed) produced water, chemicals and wastes associated with upstream oil and gas activities in Uganda.
-

COURSE ELEMENTS:

- Origin, transport and treatment of produced water.
 - Chemical constituents and hazards of produced water.
 - Chemicals used, toxicity, storage and transport, in oil and gas exploration and production.
 - Waste management plans and procedures.
 - Waste handling facilities and best practices.
 - Emergency response to chemical and produced water spills.
 - Necessary PPE and other equipment.
-

RECIPIENTS:

- MDAs involved with the review of oil and gas activities.
- District personnel.

4. Environmental Compliance, Monitoring and Site Inspection

WHY:

- To review company and MDA requirements, roles and responsibilities involved with monitoring and inspecting oil and gas operations.
-

COURSE ELEMENTS:

- Monitoring and reporting requirements defined in the company ESIA and CoA.
 - Role of company contractors in monitoring and reporting.
 - Role of MDA in evaluating company monitoring activities.
 - Equipment required for monitoring (air, water, noise and light).
 - Field monitoring role of MDA.
 - Reporting and public disclosure of monitoring reports.
-

RECIPIENTS:

- Primary MDAs involved with oversight of oil and gas activities.
- District personnel.

5. Oil Spill Response Management

WHY:

- An efficient spill response is necessary to reduce potential environment and socioeconomic impacts of an oil spill.
 - To educate on the proper and efficient management of oil spill response including organizational structure, equipment and waste handling and treatment.
 - To review the NOSCP in terms of activation and roles and responsibilities.
-

COURSE ELEMENTS:

- The NOSCP, Government, Company and MDA activities.
 - Tier 1, 2, and 3 responses.
 - Chemical, physical and toxicological properties of Albertine Graben oil.
 - Methods to track spilled oil (surveillance, Shoreline Cleanup Assessment Team (SCAT), modelling).
 - Potential impacts inland, shoreline and on-water (Lake Albert).
 - Projected ecological and socio-economic effects.
 - Spill management structure and the Incident Command System.
 - Response techniques (standard and alternative).
 - Waste management and treatment.
 - Worker health and safety.
-

RECIPIENTS:

- MDAs under potential callup listed in the NOSCP
- District personnel.

6. Emergency Response Management (other than oil spills)

WHY:

- An effective response to other incidents can reduce environmental, socioeconomic and human-health risks associated with other emergency events, such as:
 - Chemical spills,
 - Produced water releases,
 - Road accidents,
 - Emergency medical incidents,
 - And others.
 - To review MDA and company responsibilities and response procedures.
-

COURSE ELEMENTS:

- Chemicals used in oil and gas activities and hazards.
 - Produced water composition.
 - Response requirements for road and other medical incidents.
 - Interface between company, District and MDAs.
 - Health and safety.
-

RECIPIENTS:

- MDAs directly involved with oil and gas activities
- District personnel.

7. Worker Health and Safety

COURSE ELEMENTS:

- 12 Golden Rules
 - Proper PPE
 - Individual responsibility.
 - Monitoring.
-

RECIPIENTS:

- MDAs directly involved with oil and gas activities
- District personnel.

8. First Responder

WHY:

- An MDA representative working in the Albertine Graben area may be the first Government official on-scene to an emergency event.
 - Events could include:
 - Oil spill,
 - Produced water spill,
 - Road accident or medical emergency,
 - Chemical spill, and
 - Other unexpected incidents.
-

COURSE ELEMENTS:

- Hazard identification.
 - Immediate actions available.
 - Health and safety.
 - Notification and Reporting requirements.
-

RECIPIENTS:

- MDAs with personnel active in oil lease areas.
- District personnel.

List of Relevant Training and Education Programmes

Table 5. Courses and trainings relevant for the oil and gas sector.

No.	Institution	Programme
Environmental Management of Upstream Oil and Gas Activities		
1.	Uganda Christian University	Master of Business Administration – Oil and Gas Management (MBA)
2.	Institute of Petroleum Studies	BSc Oil and Gas Management BSc Environmental, Health & Safety Management Master of Laws Oil and Gas (LLM) MSc Environmental, Health & Safety] MBA in Oil and Gas Management
3.	Uganda Technology and Management University	PG Diploma in Oil Governance and Management Bachelor of Oil and Gas Management
4.	Nexus International University	MBA (Oil and Gas Management)
5.	Makerere University	MSc in Environment and Natural Resources Management MSc in Botany, Natural Resources Ecology & Conservation MSc in Wildlife Resource Management Master of Energy Economics and Governance
6.	Oil and Gas Supply & Training Services Limited	NEBOSH Certificate in Environmental Management
7.	Kabale University	Diploma in Environmental Science
8.	Nkumba University	BSc in Environment Management
9.	Oil & Gas Supply & Training Services Limited	Upstream to Downstream Petroleum Management Training
10.	Global Institute of Petroleum Studies	Diploma and IVQ Certificate in Oil and Gas and Oil IVQ certificate in Oil and Gas (Downstream Operation) Diploma in Renewable Energy
Oil and Petroleum Engineering		
1.	Kyambogo University - Department of Mining, Chemical and Petroleum Engineering,	BSc Chemical and Process Engineering BSc Oil and Gas Engineering MSc Oil and Gas Engineering MSc Chemicals and Process Engineering MSc Mining Engineering PG Diploma Oil and Gas Engineering
2.	Makerere University	MSc Geo-Information Science and Technology MSc in Petroleum Geosciences
3.	Mbarara University of Science & Technology	BSc Petroleum Engineering and Environmental Management MSc in Biology Natural Resources' Ecology, Management & Conservation

No.	Institution	Programme
4.	Busitema University	BSc Mining Engineering
5.	Nkumba University	BSc Petroleum and Minerals Geoscience
6.	Global Institute of Petroleum Studies	Diploma in Petrochemical Engineering

Environmental and Social Impact Assessment (ESIA)

1.	Makerere University	PG Diploma Environmental Impact Assessment
2.	Busitema University	Diploma Environment and Social Impact Assessment

Disaster Risk Management

1.	Makerere University	MSc in Disaster Risk Management Strengthening Leadership in Disaster Resilience Programme Certificate Course in Climate Risk Management
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Produced Water, Chemicals and Waste Management

1.	Kyambogo University	MSc in Water & Sanitation Engineering (curriculum covers EIA's, wastewater quality and treatment)
2.	Oil & Gas Supply & Training Services Limited	Waste Management and Chemical Handling

Emergency Response Management

1.	Bugema University	Humanitarian Emergency and Disaster Management
2.	Oil & Gas Supply & Training Services Limited	Emergency Response

Worker Health & Safety

1.	Oil and Gas Supply & Training Services Limited	NEBOSH National General Certificate in Occupational Health and Safety NEBOSH National Certificate in Construction Health and Safety NEBOSH International Technical Certificate in Oil and Gas Operational Safety National General Health and Safety Certificate Oil Pipeline Training & Supervision Oil and Gas Industry Safety Management ORVHS Safety Theoretical Practical Training
2.	Global Institute of Petroleum Studies	Diploma in Occupational Health and Safety IVQ Certificate in Occupational Health and Safety IVQ Certificate in Operations and Maintenance

F. Update of 2017 CNA Spider chart

UNEP created a CNA rapid assessment checklist, to support the in-country capacity needs assessment process in OfD supported countries. This checklist has been illustrated as a spider chart below. This diagram charts performance across eight factors which provide a general and qualitative assessment of key components, essential for strengthening environmental governance and management in the oil and gas sector. It focuses on policy/legal/institutional frameworks, institutional capacities, as well as a broad assessment of capacities of other non-governmental actors and their engagements in/with the oil and gas sector, including national universities/academia, civil society, and media. The rapid checklist is usually carried out in consultation with core government focal points, and is further refined through the in-country assessment process which draws from multiple stakeholders (government and non-government). The spider charts below illustrate the results of the CNA rapid checklist for Uganda initially undertaken in 2017, updated in 2023 and a comparative analysis.

Figure A2: Institutional Capacity Needs for Strengthened Environmental Management and Governance in the Oil and Gas Sector in Uganda 2017.



Figure A3: Institutional Capacity Needs for Strengthened Environmental Management and Governance in the Oil and Gas Sector in Uganda 2023.



Figure A4: Comparison of Overall Institutional Capacity Needs Assessment 2023 v 2017.



G. Master List of Consultations

No.	Name	Institution	Gender	KM	GV	CV	SM	NK	BM	SV	SQ	FR	NV	
1.	Patrick Abyamuka	Ministry of Agriculture, Animal industry and Fisheries, Fisheries Directorate	M											
2.	Caroline Aguti	Ministry of Energy and Mineral Development	F											
3.	Frank Mugisha		M											
4.	Shallon Niwamanya		F											
5.	Edward Makana		M											
6.	Dorothy Orishaba		F											
7.	Anthony Katusiime		M											
8.	F Elungat		M											
9.	Tonny Serubiri		M											
10.	Caroline Nambozo		F											
11.	Hillary Arima		M											
12.	Robert Jalum		M											
13.	Gillian Mercy Lawino		Ministry of Finance Planning and Economic Development	F										
14.	Richard Lwamafa	Ministry of Foreign Affairs	M											
15.	Kalanda Ismail Buyego	Ministry of Gender, Labour and Social Department	M											
16.	Ssentongo Ambrose		M											
17.	Francis Odong		M											
18.	Nuluyati Nabiwande		F											
19.	Ssenteza Jude	Ministry of Lands Housing and Urban Development	M											
20.	Jotham Muyambi		M											
21.	Kalosi Simon	Ministry of Local Government	M											
22.	Dismas Ongwen Jacob	Ministry of Tourism, Wildlife and Antiquities	M											
23.	Catherine Ajimbo		F											
24.	Baluka Joward		M											
25.	Anthelum Wagena		F											
26.	Stephen Fred Okiror		M											
27.	Mugabi Stephen David	Ministry of Water and Environment	M											
28.	Dadinoh Ndibaremah		M											

No.	Name	Institution	Gender	KM	GV	CV	SM	NK	BM	SV	SQ	FR	NV
29.	Tenywa Emmanuel	Ministry of Water and Environment	M										
30.	Apiyo Kevin		F										
31.	Odong Joseph		M										
32.	Victoria Kinobe		F										
33.	Maureen Anino		F										
34.	Juliet Atino	Ministry of Works and Transport	F										
35.	Mutemo Charles		M										
36.	Isaac I.G. Ntujju	National Environment Management Authority	M										
37.	Patience Nsereko		F										
38.	Moltar Arimwesiga		M										
39.	Sarah Kawala		F										
40.	Ariho Julius	National Forestry Authority	M										
41.	Ronald Mugobera		M										
42.	Leo Twinomwaty		M										
43.	Anicia Brenda		F										
44.	Mukalazi Frank		M										
45.	Naturinda Peninah		F										
46.	Kabi Maxwell		M										
47.	John Diisi		M										
48.	Pamela Komujuni	Office of the Prime Minister	F										
49.	Enid Turyahikayo	Petroleum Authority of Uganda	F										
50.	Ronald Angutoko		M										
51.	Joseph Kobusheshe		M										
52.	Byamugisha Hamidu Kigongo	Rural Electrification Agency Uganda	M										
53.	Charles Mwesige	Uganda National Oil Company	M										
54.	Carolyn Natuhwera Mugumya	Uganda National Roads Authority	F										
55.	John Makombo	Uganda Wildlife Authority	M										
56.	Justine Namara		F										
57.	Tugume Benald	Buliisa District	M										

G. Master List of Consultations continued

No.	Name	Institution	Gender	KM	GV	CV	SM	NK	BM	SV	SQ	FR	NV
58.	Nyangoma Joseline	Hoima District	F										
59.	Charles Komakech	Hoima District CAO	M										
60.	Omara Emmanuel	Nwoya District	M										
61.	Yusuf Akubonabona	Nwoya District CAO	M										
62.	Elsie Ariho Mugumya		F										
63.	Gerald Barekye	African Institute for Energy Governance	M										
64.	Dickens Amany	Bunyoro Albertine Petroleum Network on Environmental Conservation	M										
65.	Derrick Mugisha	Biodiversity Hub International	M										
66.	Ndyowe Grace		M										
67.	Bashir Twesigye	Civic Response on Environment and Development	M										
68.	Clare Ayebare		F										
69.	Ramji Krishna	Northern Albertine Network on Environment and Petroleum	M										
70.	Robert John Turyakira	National Coalition for Human Rights Defenders	M										
71.	Alexander Krosby	WWF Norway	M										
72.	Paolo Tibaldeshi		M										
73.	Annet Tumwine	WWF Uganda	F										
74.	James Kakeeto		M										
75.	Winnie Mirembe		F										
76.	Paul Mulondo		M										
77.	Yonah Turinayo		M										
78.	Betty Nagudi	Makerere University	F										
79.	Emmanuel Kasimbazi		M										
80.	Andrew Muwanga		M										
81.	Simon Echegu		M										
82.	Kitutu Joseph		M										
83.	Dr. Tom Ogwang	Mbarara University of Science & Technology	M										
84.	Kiiza Enron	The Environment Shield	M										

No.	Name	Institution	Gender	KM	GV	CV	SM	NK	BM	SV	SQ	FR	NV
85.	Samuel Bahemuka	Enviroserv Uganda	M										
86.	Atima Jonathan		M										
87.	Samuel Olweny		M										
88.	Albert Kyaligonza		M										
89.	Ochola Abraham	Total Energies Uganda	M										
90.	Jackline Nazziwa		F										
91.	Edward Omoya	East African Development Bank	M										
92.	Robert Akankwasa	International Organisation for Migration	M										
93.	Kjersti Lindøe	Royal Norwegian Embassy in Kampala	M										
94.	Robert Bagyenda	US AID	M										
95.	Ximena Rosio Herbas Ramirez	World Bank	F										
96.	Cecilie Gundersen	World Food Programme	F										
97.	Emelia Susan Ngongi Namondo	UN RCO	F										
98.	Rekha Shrestha		F										
99.	Tom Sengalama	UNDP Uganda	M										
100.	Gloria Namande		F										
101.	William Otieno	UNFCCC RCC	M										
102.	Helge M. Andersen	Norwegian Coastal Administration	M										
103.	Ole Kristian Bjerkemo		M										
104.	Frank Eklo	Norwegian Environment Agency	M										
105.	Anette Fischer		F										
106.	Diana Seranno	UNEP-WCMC	F										
107.	Sharon Brooks		F										
108.	Ruth Fletcher		F										
109.	Hannah Grice		F										
110.	Mohammed Aminu	Clean Air Task Force	M										
111.	Ioannis Binietoglou		M										
112.	Alfredo Miranda		M										
113.	Zitely Tzompa Sosa		F										

G. Master List of Consultations continued

No.	Name	Institution	Gender	KM	GV	CV	SM	NK	BM	SV	SQ	FR	NV
114.	Meghan Demeter	Climate and Energy Branch, UNEP	F										
115.	Nicole Owusua Caesar	Chemicals and Health Branch, UNEP	F										
116.	Cecilia Aipira	Disasters and Conflicts Branch, UNEP	F										
117.	Mathew Richmond	Expert Consultant, UNEP	M										
118.	Lindsay Page-Jones		M										

Legend:

KM Kick-off Meeting, May 2022 **GV** Government Virtual Consultation Meetings, August 2022 **CV** CSO Virtual Consultation Meetings, August 2022 **SM** Scoping Mission, January 2023 **NK** National Kick-off Meeting, March 2023 **BM** Bilateral Meetings, March 2023 **SV** Site Visits, March 2023 **SQ** Survey Questionnaires, June - August 2023 **FR** Final Review of Draft Report, September - October 2023 **NV** National Validation Workshop, November 2023

H. International Development Partners in Uganda for Resource Mobilization

The Uganda CNA aims to provide a strategic “road map” for institutional capacity development. In this regard, the CNA report also provides a list of potential partners in Uganda with whom the Ugandan government institutions can collaborate to support national efforts to strengthen environmental governance and management in the oil and gas sectors and support implementation of CNA recommendations.

Methodology

A qualitative research methodology was adopted to compile an initial excel document with available secondary data regarding potential partners who are involved in various environment/energy/pollution-related projects in the country. These partners can be categorised as:

- Public: Bilateral agencies/aid agencies; UN agencies, International Finance Institutions; National Governments; and regional/local authorities
- Private: Corporate partners and their linked foundations; business/private sector associations, Chambers of Commerce/Trade, etc
- Domestic and international organisations including NGOs
- Other bilateral organizations
- Academic: Public and private institutions
- Other training institutions

The following desk-based review was drafted detailing all the potential development partners for Uganda. This review organizes available information with relevant web links as follows:

- Potential development partners, both **international** and **domestic** from the public sector (aid agencies, foundations, civil society/NGOs, etc.) or from the private sector (oil and gas associations, business associations, Chambers of Commerce, etc) or academia.
- Existing capacity building/training programs being undertaken by partners in the country related to environment and /or oil and gas / energy issues.
- Other initiatives/projects being undertaken by partners related to environment and/or oil and gas/energy issues; energy related projects have been included in order to highlight opportunities for addressing capacity gaps with regards to environmental compliance and monitoring across the energy sector broadly, which may include renewable energy development.
- Potential training institutions in the country which the Government can partner with for sustainability of their training programmes.

List of potential development partners for Uganda

1. AFD – Agence Française de Développement

Project	Short description and Link	Funds available	Time Frame
Supporting Green Economy Together With Ugandan Banks SUNREF	The project is part of a regional programme accredited SUNREF East Africa and promoted by AFD in Kenya, Tanzania and Uganda. It plans to provide several Ugandan banks with a reduced-rate credit facility to invest in renewable energy production facilities as well as in energy efficiency projects. Information accessible here.	USD 39 million	Ongoing Project Started – 01 January 2016 (12 years of funding)
AFD/European Union (EU)			
ARE Scale-Up Facility	The project aims to boost private sector investment in on-grid and off-grid renewable energy production in Africa. <i>Implementing Agencies:</i> AFD and PROPARCO. Information accessible here.	USD 238 million	Ongoing Project Started 2017
Digital Energy Facility	The project aims to increase energy access, improve the performance of power utilities and reduce technical and commercial losses, and support the integration of renewable energy sources into the grid. Information accessible here.	USD 26.5 million (for Sub-Saharan countries)	Ongoing December 2019 – December 2023

2. AfDB – African Development Bank

Project	Short description and Link	Funds available	Time Frame
Strategic Program for Climate Resilience (SPCR) Project	The project aims to support the Government of Uganda to prepare its SPCR for addressing the challenges of climate change in a coordinated manner through appropriate measures. <i>Implementing Agency:</i> Ministry of Water, Energy and Minerals. Information accessible here.	USD 1.5 million	Ongoing Project Approved 14 January 2016
Sustainable Energy Fund for Africa (SEFA)	SEFA is a multi-donor trust fund that aims to unlock private sector investments in clean energy and hence contribute to universal access to affordable, reliable, sustainable and modern energy services in Africa. Information accessible here.	USD 274 million	Ongoing Started in 2011
Uganda – Multinational Lakes Edward and Albert Integrated Fisheries and Water Resources Management (LEAF II) Project	The project aims to sustainably increase the lakes' fish productivity by promoting good fish capture and management practice, restoration of the lakes' catchments and improvement of water quality on the shared lakes' water resources. <i>Implementing Agency:</i> Ministry of Water and Environment (MWE). Information accessible here.	USD 7 million	Ongoing 20 May 2015 – 31 December 2022
AfDB/New Partnership for Africa's Development (NEPAD)			
NEPAD Infrastructure Project Preparation Facility (IPPF)	NEPAD's IPPF is a multi-donor trust fund that supports the development of regional and continental infrastructure with grants to prepare high-quality viable transboundary projects in energy. Information accessible here.	USD 111.4 million	Completed 2016–2020

Project	Short description and Link	Funds available	Time Frame
AfDB/Power Africa/KfW			
Uganda Earth Energy Syngas Biomass – SEFA Project	The project consists of the development and operation of a 20 MW baseload Biomass Gasification plant that is expected to supply 20 MW of power to Uganda’s national grid. <i>Implementing Agency:</i> Earth Energy Co. Ltd. Information accessible here.	USD 993 thousand	Ongoing Project Started December 2016
AfDB/African Union’s Commission/NEPAD/UNEP/International Renewable Energy Agency (IRENA)			
Africa Renewable Energy Initiative (AREI)	The project aims to develop at least 10 GW of new renewable energy generation capacity by 2020, and at least 300 GW by 2030, potentially making the continent the cleanest in the world. Information accessible here.	USD 8.25 million	Ongoing 2015–2030

3. European Union (EU)

Project	Short description and Link	Funds available	Time Frame
ElectriFi – The Electrification Financing Initiative	ElectriFi is an EU-funded impact investment facility that finances early-stage and small-sized projects focusing on electricity access and generation from sustainable energy sources in sub-Saharan Africa. <i>Implementing Agencies:</i> FMO and the European Development Finance Institutions (EDFI) Management Company. Information accessible here.	USD 272 million (ElectriFi Country Window of USD 5 million for Uganda)	Ongoing January 2016 – January 2032

4. Foreign, Commonwealth and Development Office (FCDO)/United Kingdom of Britain

Project	Short description and Link	Funds available	Time Frame
Africa Clean Energy Programme (ACE)	The project aims to catalyze a market-based approach for private sector delivery of solar home system (SHS) products and services, leading to improved energy access for people in sub-Saharan Africa. <i>Implementing Agencies:</i> AfDB, International Bank for Reconstruction and Development (IBRD), Coffey International Development, DAI Europe, PricewaterhouseCoopers (PwC), IMC Worldwide, Foreign Investment Advisory Service, and AECF. Information accessible here.	USD 88.1 million (for 14 countries, including Uganda)	Completed 23 June 2016 – 23 October 2023
Cities and Infrastructure for Growth (CIG)	The project aims to provide technical support on city and regional interventions which will help city economies to become more productive and deliver access to reliable, affordable, renewable power for businesses and households. <i>Implementing Agencies:</i> Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), International Bank for Reconstruction and Development (IBRD), IPE Global Private Limited, London School of Economics and Political Science, Coffey International Development, PwC, IMC Worldwide, AECOM, Shell Foundation, Cowaters International Inc, The World Bank, United Nations Office for Project Services (UNOPS), Cardno Emerging Markets, and COPI DEVELOPMENT. Information accessible here.	USD 205 million (for 5 countries including Uganda)	Ongoing 22 June 2017 – 31 December 2023

Project	Short description and Link	Funds available	Time Frame
On and off Grid Small Scale Renewable Energy in Uganda	The project aims to improve the environment for private investment in Uganda's renewable energy sector by accelerating the market for off grid solar energy and supporting the construction of at least 17 on-grid small scale power plants. Information accessible here. <i>Implementing Agencies:</i> UNDP, DAI Europe, KPMG Uganda, Federal Ministry of Education and Research of Germany, and KfW.	USD 37.2 million	Ongoing 11 March 2013 – 31 March 2024
Transforming Energy Access (TEA) for Households and Improved Livelihoods Programme	The project aims to support early-stage testing and scale up of innovative technologies and business models that will accelerate access to affordable, clean energy services for poor households and enterprises, especially in Africa. <i>Implementing Agencies:</i> The Carbon Trust, LTS International, Aston University, E4tech and Aiguasol. Information accessible here.	USD 280 million (for 10 countries including Uganda)	Ongoing 2015 – 2027
WISER – Weather and Climate Information and SERVICES for Africa	The project aims to help at least 24 million people across Africa to be more resilient to natural disasters and climate change by 2030 by improving early warning systems. <i>Implementing Agencies:</i> United Nations Economic Commission for Europe, Met Office and DAI Europe. Information accessible here.	USD 44 million (for 6 countries inclusive Uganda)	Ongoing 05 August 2015 – 31 March 2022
FCDO/UK – Department for Business, Energy and Industrial Strategy			
Global Energy Transfer Feed-in Tariff (GETFIT)	The project aims to assist Uganda to pursue a climate resilient low-carbon development path by facilitating private sector investments in renewable electricity generation projects. Information accessible here. <i>Implementing Agency:</i> KfW.	USD 34.9 million	Ongoing 01 March 2013 – 01 December 2024
FCDO/Ministry of Foreign Affairs of Finland/KPMG/Austrian Development Corporation (ADA)			
The Energy and Environment Partnership Programme of Southern and East Africa (EEP S&EA)	The project aims to increase access to modern, clean, affordable and reliable energy services through a wider uptake of renewable energy and energy efficiency. Information accessible here.	Phase I: USD 28 million Phase II: USD 39 million (for 13 countries, including Uganda)	Completed Phase I: 2010 – 2013 Phase II: 2013 – 2017

5. German Federal Ministry for Economic Cooperation and Development (BMZ)

Project	Short description and Link	Funds available	Time Frame
BMZ/EU			
Promotion of Renewable Energy and Energy Efficiency Programme (PREEEP)	The project aims to help increase the electricity production from renewable energy sources and improving access to renewable and clean energy as well as its efficiency and supply. Information accessible here. <i>Implementing Agency:</i> GIZ. <i>Executing Agency:</i> Ugandan Ministry of Energy and Mineral Development (MEMD).	Not Available	Ongoing 2019 – 2023

Project	Short description and Link	Funds available	Time Frame
BMZ/EU/German Climate Technology Initiative (DKTI)			
Promotion of Mini Grids for Rural Electrification in Uganda	The project improved framework conditions for scaling up private sector investment in renewable energy mini-grid electricity distribution. Information accessible here. <i>Implementing Agency:</i> GIZ. <i>Executing Agency:</i> MEMD.	USD 11.1 million	Ongoing 2016 – 2023
BMZ/GIZ/KfW			
Green People's Energy (GBE)	The project aims to improve the conditions for supplying regions in rural Africa with decentralised renewable energy, assisted by the involvement of citizens and the private sector. Information accessible here.	USD 71.8 million (for 9 countries, including Uganda)	Ongoing 2018 – 2023

6. German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMU)

Project	Short description and Link	Funds available	Time Frame
Conserving Biodiversity in the Nile Basin Transboundary Wetlands	The project strengthened the technical and institutional capabilities needed to sustainably manage the vital Nile Basin transboundary wetlands. <i>Implementing Agency:</i> GIZ. <i>Executing Agency:</i> Nile Basin Initiative (NBI). Information accessible here.	USD 15.3 million (for Nile Basin riparian states)	Completed October 2015 – September 2021
Global Carbon Market	The project aims to encourage public and private decision-makers in Uganda and the East African region to use carbon market instruments for national climate protection activities. Information accessible here. <i>Implementing Agency:</i> GIZ. <i>Executing Agency:</i> Climate Change Department of MWE.	NA	Ongoing 2018 – 2023

7. Global Environment Facility (GEF)

Project	Short description and Link	Funds available	Time Frame
Energy for Rural Transformation Project (Phase III)	The project aimed to increase access to electricity and reduce greenhouse gas emissions in rural areas of Uganda. Information accessible here. <i>Implementing Agency:</i> The World Bank. <i>Executing Agencies:</i> Uganda Ministries of Energy and Mineral Development, Water and Environment, Health, and Education; and REA.	USD 176 million	Completed December 2016 – December 2021
Enhancing Conjunctive Management of Surface and Groundwater Resources in Selected Transboundary Aquifers: Case Study for Selected Shared Groundwater Bodies in the Nile Basin	The project aims to enhance knowledge and capacity for sustainable use and management of transboundary aquifers and aquifers of regional significance in the Nile Basin. Information accessible here. <i>Implementing Agencies:</i> UNDP. <i>Executing agencies:</i> Nile Basin Initiative (NBI).	USD 31 million (for 7 countries, including Uganda)	Ongoing November 2019 – November 2024

Project	Short description and Link	Funds available	Time Frame
GEF SGP Sixth Operational Phase- Strategic Implementation using STAR Resources, Tranche 2 (Part IV)	The project aims to support the creation of global environmental benefits and the safeguarding of the global environment through community and local solutions that complement and add value to national and global level action. Information accessible here. <i>Implementing Agencies:</i> UNDP. <i>Executing Agencies:</i> UNOPS.	USD 39 million (for 24 countries including Uganda)	Ongoing April 2018 – April 2022 Should be closed but project status shows 'Under Implementation'
GEF SGP 7th Operational Phase – Strategic Implementation using STAR Resources mainly in LDCs and SIDs (Part 3)	The project aims to promote and support innovative and scalable initiatives, and foster multistakeholder partnerships at the local level to tackle global environmental issues in priority landscapes and seascapes. Information accessible here. <i>Implementing Agency:</i> UNDP. <i>Executing agency:</i> UNOPS.	USD 90 million (for 58 countries, including Uganda)	Ongoing 01 March 2022 – 31 May 2026
GEF Support to UNCCD 2018 National Reporting Process – Umbrella IV	The project enabled country parties to collect necessary biophysical, socioeconomic data, establish sound reporting and monitoring systems at national level and report against the UNCCD Strategy. Information accessible here. <i>Implementing Agency:</i> UNEP. <i>Executing Agencies:</i> National Focal Points and host institutions of countries.	USD 1.8 million (for 25 countries, including Uganda)	Completed March 2018 – March 2020
Lake Victoria Environmental Management Programme Phase 3	The project aims to strengthen transboundary natural resources management and climate-resilience in the Lake Victoria Basin and reduce environmental degradation in selected hotspot areas. Information accessible here. <i>Implementing Agency:</i> The World Bank. <i>Executing Agency:</i> Lake Victoria Basin Commission.	USD 260 million (for 5 countries, including Uganda)	Ongoing Concept Approved: 30 November 2018
Lakes Edward and Albert Integrated Fisheries and Water Resources Management Project	The project ensured the sustainable development, management and utilization of the shared water and fisheries resources of the Lakes Edward and Albert Basin. Information accessible here. <i>Implementing Agency:</i> AfDB. <i>Executing Agency:</i> NBI.	USD 31.5 million (for Democratic Republic of Congo and Uganda)	Completed 27 January 2016 – 30 June 2022
Reducing the Climate Change Vulnerability of Local Communities in Uganda through EbA in Forest and Wetland Ecosystems	The project aims to increase the capacity of government and local communities in Uganda to implement EbA in wetland and forest ecosystems to reduce vulnerability to climate change. Information accessible here. <i>Implementing Agency:</i> UNEP. <i>Executing Agency:</i> MWE.	USD 20.9 million Donor: Least Developed Countries Fund	Ongoing July 2019 – July 2024
Technology Needs Assessments – Phase III (TNA Phase III)	The project carried out technology transfer in project countries facilitated through improved Technology Needs Assessments (TNA) and national Technology Action Plans (TAPs). Information accessible here. <i>Implementing Agency:</i> UNEP. <i>Executing Agencies:</i> Technical University of Denmark – UNEP DTU Partnership (UDP), and other national agencies.	USD 8.9 million (for 24 countries, including Uganda)	Completed March 2018 – March 2023
Umbrella Programme for Preparation of National Communications and Biennial Update Reports to the UNFCCC	The project aims to support eighteen developing countries prepare and submit National Communications (NCs) and Biennial Update Reports (BURs) that comply with the UNFCCC reporting requirements. Information accessible here. <i>Implementing Agency:</i> UNEP. <i>Executing Agencies:</i> 18 National Governments.	USD 11 million (for 18 countries, including Uganda)	Ongoing 04 October 2017 – 30 April 2025

8. Government of Canada (GoC)

Project	Short description and Link	Funds available	Time Frame
GoC/International Finance Corporation (IFC)			
The Canada-IFC Blended Climate Finance Program	The projects aims to catalyze private sector financing for resilient infrastructure, climate-smart agriculture, and renewable energy. Information accessible here.	USD 196 million	Ongoing Project Started: March 2018
The Canada-IFC Renewable Energy Program	The projects aims to catalyze private sector financing for resilient infrastructure, climate-smart agriculture, and renewable energy projects in Sub-Saharan Africa as a means to improve access to affordable and sustainable energy services that play an important role in reducing poverty, reducing gender inequality, and tackling climate change. Information accessible here.	USD 117 million	Ongoing Project Started: December 2017

9. Green Climate Fund (GCF)n

Project	Short description and Link	Funds available	Time Frame
Climate Investor One	The projects aims to provide financing to develop renewable energy projects in regions with power deficits to reduce energy costs and CO ₂ emissions. Information accessible here.	USD 821.5 million (for 18 countries including Uganda)	Ongoing 20 October 2018 – 21 June 2037
Global Subnational Climate Fund (SnCF Global) – Equity	The project aims to catalyze long-term climate investment at the sub-national level for mitigation and adaptation solutions through a transformative financing model. Information accessible here.	USD 750 million (for 42 countries, including Uganda)	Ongoing 13 November 2020 – 20 April 2040
Global Subnational Climate Fund (SnCF Global) – Technical Assistance (TA) Facility	The project aims to catalyze long-term climate investment at the sub-national level for mitigation and adaptation solutions through a transformative financing model. Information accessible here.	USD 28 million (for 42 countries, including Uganda)	Ongoing 13 November 2020 – 20 April 2028
Participation in Energy Access Relief Facility (EARF)	EARF is a concessional debt fund that is intended to provide energy access companies with loans that will help them remain solvent, drive the post-COVID-19 recovery, and reduce 1.3 million tonnes of carbon dioxide equivalent (MtCO ₂ eq) in emissions. Information accessible here.	USD 60 million (for 9 countries including Uganda)	Ongoing 13 November 2020 – 04 May 2026
Transforming Financial Systems for Climate	The project aims to provide loans and technical assistance in 17 developing countries across Africa and Latin America and the Caribbean to create self-sustaining markets in energy efficiency, renewable energy and climate resilience. Information accessible here.	USD 728.8 million (for 17 countries, including Uganda)	Ongoing 20 October 2018 – 28 April 2028
Universal Green Energy Access Programme (UGEAP)	The project aims to provide universal access to electricity in Sub-Saharan Africa by scaling up investments in renewable energy from local financial markets and the international private sector. Information accessible here.	USD 301.6 million (for 7 countries including Uganda)	Ongoing Project Approved: 14 October 2016 – 06 July 2042

10. International Union for Conservation of Nature (IUCN)n

Project	Short description and Link	Funds available	Time Frame
IUCN Save Our Species African Wildlife Initiative and the BIOPAMA Action Component	The project aims to help address impacts from COVID-19 on the conservation of terrestrial or freshwater species in continental Sub-Saharan Africa, Madagascar, Caribbean and Pacific regions. Information accessible here.	USD 6 million Donors: EU and the Organisation of African, Caribbean and Pacific States (OACPS)	Ongoing 2020 – 2023

11. Swedish International Development Agency (Sida)

Project	Short description and Link	Funds available	Time Frame
The Energy Efficient Lighting and Appliances (EELA) Project	The project aims to provide early stage grant and catalytic financing to innovative clean energy projects, technologies and business models in 15 countries across Southern and East Africa, Madagascar, Caribbean and Pacific regions. Information accessible here. <i>Implementing Agency:</i> UNIDO. <i>Executing Agencies:</i> SACREEE (SADC Centre for Renewable Energy and Energy Efficiency) and EACREEE (East African Centre for Renewable Energy and Energy Efficiency).	USD 6.9 million	Completed 2019 – 2024

12. The World Bank

Project	Short description and Link	Funds available	Time Frame
Uganda Digital Acceleration Project-GovNet (UDAP- GovNet)	The project aims to expand access to high speed, affordable internet, enable efficiency of digital public service and strengthen digital inclusion. Information accessible here. <i>Implementation Agency:</i> National Information Technology Authority	USD 200 million	02 June 2023 – 30 May 2026
Energy for Rural Transformation III	The project aimed to increase access to electricity in rural areas of Ugandan. <i>Implementing Agencies:</i> MEMD, REA, and Uganda Energy Credit Capitalization Company (UECCC). Information accessible here.	USD 168.2 million	Completed 05 June 2015 – 30 June 2023
Integrated Water Management and Development Project	The project aims to improve access to water supply and sanitation services, integrated water resources management, and operational performance of water and sanitation service providers in project areas. Information accessible here. <i>Implementing Agencies:</i> National Water And Sewerage Corporation and MWE.	USD 313 million	Ongoing 14 June 2018 – 02 December 2024
National Content Development for the Oil Sector	The project supported Uganda's implementation of the country's National Content Policy for the oil and gas sector. <i>Implementing Agency:</i> Directorate of Petroleum. Information accessible here.	USD 500 thousand	Completed 09 August 2017 – 30 April 2020
Securing Uganda's Natural Resource Base in Protected Areas Project	The project aims to improve sustainable management of, and increase benefits to communities from, target protected areas in response to COVID-19 impacts. <i>Implementing Agencies:</i> Uganda Wildlife Authority and NFA. Information accessible here.	USD 2.7 million	Ongoing 20 May 2021 – 31 May 2024

Project	Short description and Link	Funds available	Time Frame
Uganda Clean Cooking Supply Chain Expansion Project	The project aimed to reduce both (i) the economic burden on households and (ii) the negative impacts on the environment, of the inefficient use of solid biomass fuels for cooking by fostering sales and adoption of cleaner and more efficient cooking technologies. Information accessible here. <i>Implementing Agency:</i> MEMD and Private Sector Foundation Uganda (PSFU).	USD 2.2 million	Completed 05 March 2016 – 30 September 2020
UG GEF Energy for Rural Transformation III)	The project aimed to increase access to electricity in rural areas of Uganda. Information accessible here.	USD 8.2 million	Completed 05 June 2015 – 30 November 2022
Uganda Grid Expansion and Reinforcement Project (GERP)	The project aims to increase availability and efficiency of bulk electricity supply in the project areas. Information accessible here. <i>Implementing Agencies:</i> MEMD and Uganda Electricity Transmission Company Limited.	USD 127.3 million	Ongoing 31 May 2016 – 30 April 2024
Uganda Rural Electrification	The project aims to increase access to electricity in rural areas of Uganda. Information accessible here. <i>Implementing Agencies:</i> MEMD, REA, Uganda Energy Credit Capitalization Company (UECCC), and Uganda Energy Credit Capitalization Company.	USD 13.7 million	Ongoing 30 December 2016 – 31 October 2025
The World Bank/Energy Sector Management Assistance Program (ESMAP)/AFD/IRENA/International Solar Alliance (ISA)			
Sustainable Renewables Risk Mitigation Initiative (SRMI)	The projects are expected to unlock 900 MW of privately financed solar generation and 600 MWh of storage, mobilizing US\$ 1.3 billion of private investment and providing access to affordable and clean electricity to around 5 million people. Information accessible here.	USD 255 million (for 4 countries, including Uganda)	Ongoing 2018 – 2035
The World Bank and the Global Facility for Disaster Reduction and Recovery (GFDRR)			
Supporting preparedness diagnostic and urban resilience in Uganda	The project aims to strengthen disaster risk governance and assess the status of disaster preparedness in Uganda. Information accessible here.	USD 193,000	Ongoing 05/2022 – 09/2023

13. United Nations Development Programme (UNDP)

Project	Short description and Link	Funds available	Time Frame
The Green Charcoal Project	The project aims to promote improved charcoal production technologies and sustainable land management practices through an integrated approach while still earning from biomass fuels. <i>Implementing Agencies:</i> MEMD, MWE, NFA, Nyabyeya Forestry College and the four districts of Kiboga, Kiryandongo, Mubende and Nakaseke. Information accessible here.	USD 14.6 million Donors: GEF, FAO, UNCDF, GIZ, BTC and the Government of Uganda.	Ongoing Completed October 2014 – September 2018

14. United States Agency for International Development (USAID)

Project	Short description and Link	Funds available	Time Frame
United States Agency for International Development (USAID)/Duke Energy/BMZ/Sida/Overseas Private Investment Corporation (OPIC)			
Powering Agriculture: An Energy Grand Challenge (PAEGC)	The project aims to support the development and deployment of clean energy innovations that stimulate low-carbon economic growth in the agriculture sector of developing countries. Information accessible here.	USD 51.2 million	Completed 2013 – 2019

15. University of Georgia Research Foundation (UGARF)

Project	Short description and Link	Funds available	Time Frame
Renewable Energy-Powered Evaporative Cooling for Smallholder Farmers	UGARF developed a two-component device (EvaKuula) powered by biogas extracted from cow manure which delivers a mild heat treatment followed by a gentle evaporative cooling process that keeps the milk fresh overnight. Information accessible here.	USD 1 million	Completed 03 January 2014 – 31 March 2018

16. United Nations Institute for Training and Research (UNITAR)

Project	Short description and Link	Time Frame
UNITAR/ILO Global GHS Capacity Building Programme	The project aims to assist in capacity building by providing training on classification, labelling, safety data sheets, situation/gap analysis, implementation strategies, legislation. Information accessible here.	Ongoing Flexible
The Programme Advisory Group (PAG) for the UNITAR/ILO/IOMC GHS Training and Capacity Building Programme	This project provides support by reviewing documents, provides guidance and ensures coordination with other hazard communication initiatives. Information accessible here.	Ongoing Flexible
The Global Partnership to Implement the GHS	Classification, labelling and safety data sheets (SDS) provide the fundamentals for the sound management of chemicals and waste. GHS provides harmonized chemical hazard classification criteria, universal pictograms and regulations at national, regional and worldwide level, an important factor also for trade facilitation. Information accessible here.	Ongoing Flexible

Other Potential Partners:

Other potential development partners that are not mentioned in this report are listed below:

- Austrian Development Corporation (ADA)
- Joint Energy Environment Projects (JEEP)
- International Renewable Energy Agency (IRENA)
- Islamic Development Bank (IsDB)
- Ministry of Foreign Affairs of Finland
- Nordic Development Fund (NDF)
- Swiss Agency for Development and Cooperation (SDC)

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