

EAST AFRICAN CRUDE OIL PIPELINE



ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT SUMMARY TANZANIA



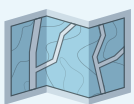
INTRODUCTION

This document explains the East African Crude Oil Pipeline (EACOP) Project and the Environmental and Social Impact Assessment (ESIA) conducted by the Project. It describes the type of effects the EACOP will have on local communities and the environment. It also explains about what is going to be done about those effects.



The EACOP will transport oil from Hoima District, Uganda, to a storage facility in Tanga District and a nearby offshore tanker loading platform. The EACOP project in Tanzania includes:

- ▲ A 1147-kilometre-long, 24-inch-diameter buried pipeline from the Uganda-Tanzania border to Chongoleani peninsula north of Tanga.
- ▲ Above ground buildings consisting of four stations with pumps to keep the oil moving through the pipeline from west to east, two pressure-reduction stations on the part of the pipeline that traverses from higher ground to the coast to reduce the oil pressure before it enters the storage terminal, 60 valves at key locations where the oil flow can be reduced or stopped, 21 electrical stations to power the cable, a storage tank facility adjacent to Tanga Bay, a 1.9-kilometre-long jetty to support the pipeline above water to transfer oil from the storage tanks to a platform from where the oil will be loaded onto big ships called tankers.
- ▲ 12 camps and yards where pipes and equipment will be stored, construction workers housed and a facility for coating the pipes with insulation.



Pre-construction studies



Early Works



Construction



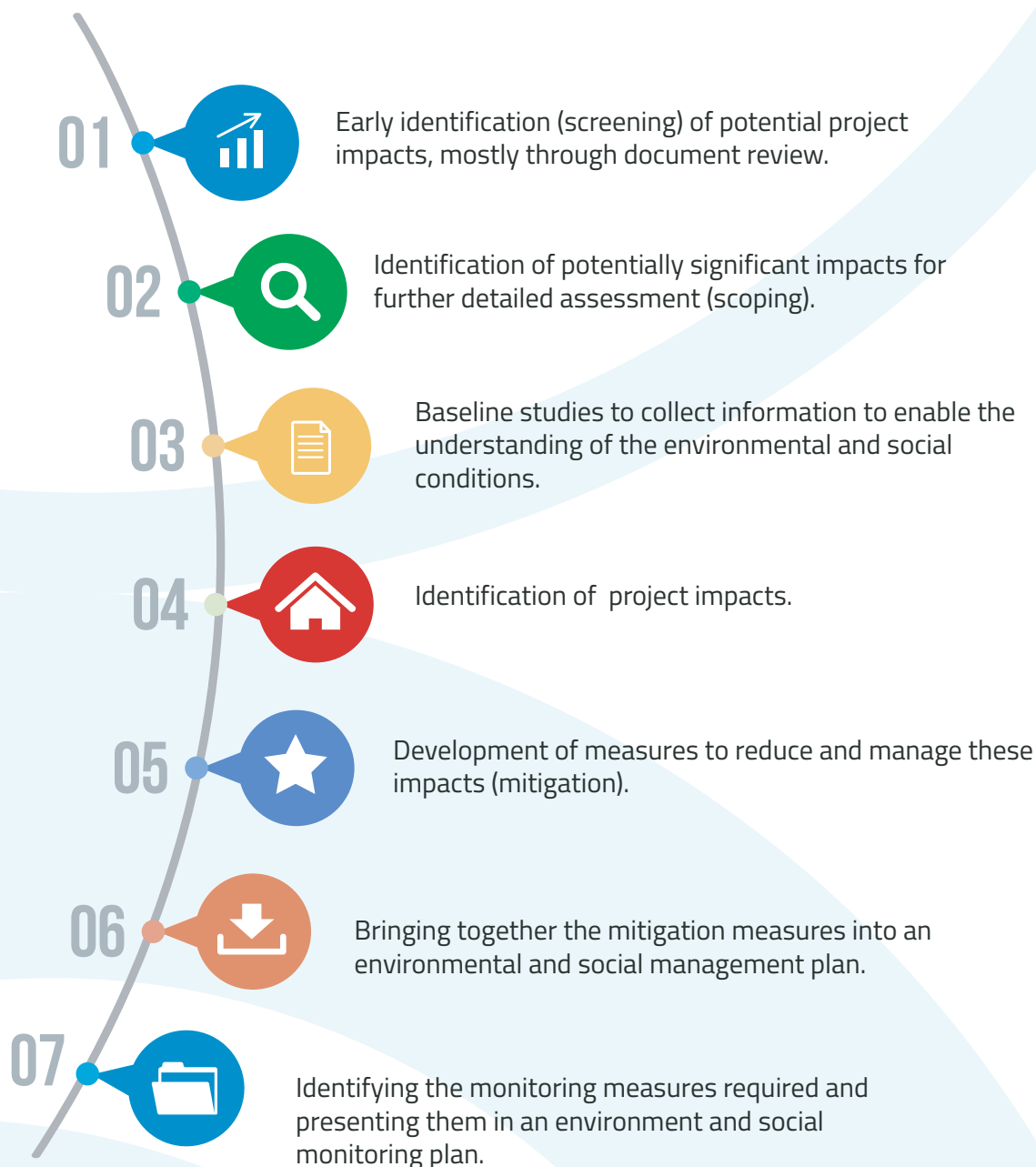
Operation



ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT PROCESS

The ESIA has been developed based on the laws of the Government of Tanzania. Positive and negative impacts on the economy, people, and environment in Tanzania are described and assessed through reviewing documents and environment and social surveys. Additionally, the project teams talked to local people including communities that will be affected by the project to get information, and understand their perspective on impacts and measures to reduce impacts. All of these views were incorporated into the ESIA.

The ESIA, developed over 2 years (2017-2018), included several steps:



A number of specific management plans will be prepared before construction starts to support the implementation of the environmental and social management, and environmental and social monitoring plans of the ESIA. The Project will ensure compliance with the provisions of those plans throughout the construction and operations.

The ESIA involved Uganda National Oil Company and Tanzania Petroleum Development Corporation, developers and operators; (Total E&P Uganda, Tullow Uganda Operations Pty Ltd and CNOOC Uganda Limited) and Total East Africa Midstream BV.

SUMMARY OF IMPACTS AND MITIGATION MEASURES

GROUNDWATER AND SURFACE WATER

How it is now?

The pipeline passes through watercourses and wetlands belonging to the Victoria and Tanganyika lake basins, the Wami–Ruvu and Pangani basins, and the internal drainage basin. Only a few of watercourses flow all year, and some channels are sensitive to erosion. Surface water quality is generally good but can be contaminated by livestock and people. People use surface water mainly for agriculture, livestock and domestic purposes. Groundwater is the most important public water source in the water basins traversed by the pipeline. Groundwater bodies in the project area range from moderate to very highly vulnerable, depending on the ability of the soil and rock to filter the water. Population growth will increase the need for domestic consumption of groundwater.



What could be the potential effects?

Ground water will be used in the construction camps and surface water used to test the integrity of the pipeline. Ground water abstraction could impact flow and ground water quality.

What is going to be done about it?

The project has established a water availability group to manage this issue. The Ministry of Water and all relevant water authorities (basin water offices) are involved in this initiative. Project will conduct surveys to identify the most suitable water sources and to avoid water use conflicts.

Mitigation measures (described in the natural resources management, pollution prevention and waste management plans) will include the monitoring of community boreholes, choice of water discharge locations and construction equipment will be refueled away from watercourses. The Soil Management plan will describe measures to reduce and control erosion.

WASTE MANAGEMENT

How it is now?

The districts crossed by the project have limited capacity to process waste.



RECYCLE



COMPOSTABLE



GENERAL



HAZARDOUS



What could be the potential effects?

The project will generate different types of solid and liquid waste with a potential impact on community health.

What is going to be done about it?

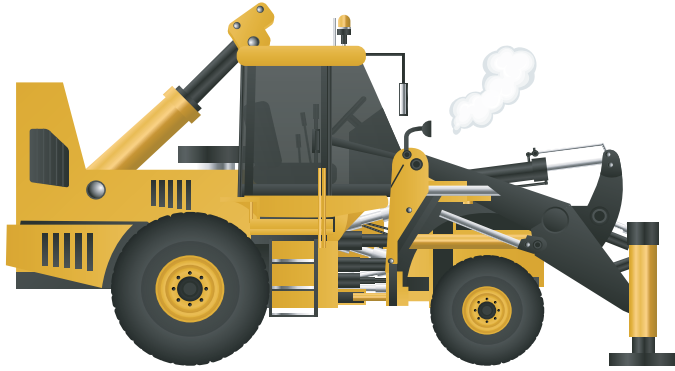
The waste management plan requires the project to minimize the use of landfills through recycling, reusing waste and finding other uses for products. Food waste will be composted or incinerated to minimize the need for a landfill as far as possible.



AIR QUALITY

How it is now?

Most of the pipeline area enjoys a relatively good air quality because much of the project traverses sparsely populated regions where there are few sources of air emissions, although moderate to high levels of dust have been detected at some locations.



What will be the effect?

Local air will be affected by dust due to vehicle traffic on murrum roadways and construction equipment on the pipeline right-of-way.

What is going to be done about it?

Dust will be reduced by wetting roads. All vehicles and equipment used will be in a good state of repair. Emissions from equipment will be monitored and actions taken if equipment is found to be in a poor state of repair. All waste treatment, storage and disposal areas will be well managed. These actions will be described in the pollution prevention and natural resources management plans.

NOISE, VIBRATION

How it is now?

The noise in the project area is mostly the sound of farming activities, wind through vegetation, bird song and occasional vehicles. There is no industrial noise throughout the area.



What will be the effect?

Construction activities are expected to change noise close to construction sites because of the activity of machines and vehicles. An increase of traffic will also contribute to increased noise. In Tanga Bay there will be in-water construction activities that could impact the marine environment.



What is going to be done about it?

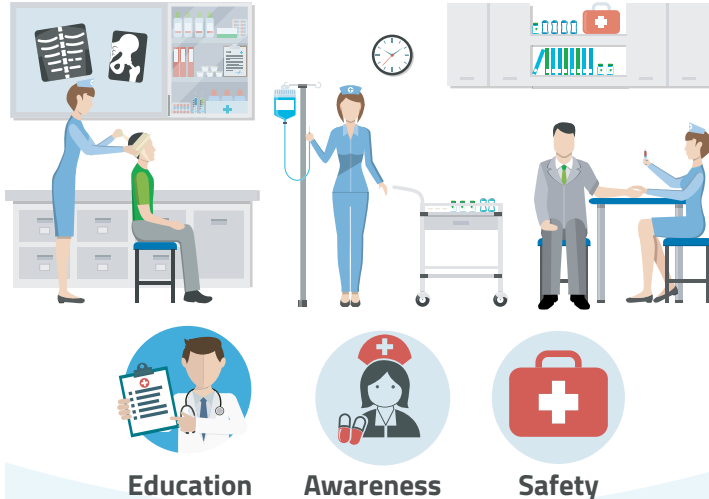
Noise levels will be monitored and documented and corrective measures implemented such as incorporation of noise reduction measures.



COMMUNITY HEALTH

How it is now?

Most people living in the project area depend on the formal health care system. Use of traditional medicine has generally decreased as more people embrace modern healthcare. A decrease or stabilization of human immunodeficiency virus (HIV) prevalence over the past five years was reported in the project area, attributed to health education, free condom distribution and increased HIV testing care and treatment. The potential for cholera, dysentery and typhoid outbreaks remains high in the project area because of health conditions, even if a decrease of diarrheal diseases is observed.



What could be the potential effects?

There could be potential increase in transmission of communicable diseases such as those transmitted through sexual relations along the transport corridors and in the construction areas. The inflow of people in the area may also put pressure on health services.

What is going to be done about it?

Education and awareness programs on health risks will be developed for communities and the workforce. The project will collaborate with Local Government Authorities to reduce health risks. The community health, safety and security plan will describe mitigation measures including access to clean water and health services for workers, and adequate drainage to avoid standing water.

COMMUNITY SAFETY, SECURITY AND WELFARE

How it is now?

The sensitivity of women, children, youth, and nomadic groups in relation to safety, security and welfare is very high. Crime and gender-based violence is increasing in Tanzania, even if initiatives to reduce crime rates involve government and other organizations. Urban and rural roads outside of the cities are generally not tarmac and their use by pedestrians is common as there is a lack of pavements. Cyclists and boda-boda (motorcycle taxis) also use the roads extensively, particularly in the more urban areas and the risk of accidents involving pedestrians, cyclists and boda-boda is considered high. Congestion is rare, except at the border with Uganda and in Dar es Salaam.

What could be the potential effects?

The project may generate accidents related to increased road traffic, particularly during construction along the transport corridors. In the construction area there is a risk of people/livestock falling into open trench/pit resulting in injury / fatality. Insecurity may increase due to the presence of incoming workers and job seekers.

What is going to be done about it?

Awareness programs on construction process and safety risks will be developed, part of the Community Health and Safety plan. Measures will be taken to make roads safer by reducing speed and using trained drivers. Security forces will support the project and will be properly trained to deal with communities. The project will minimize the duration and length of open trench. There will be safety signs, fencing in sensitive areas, introduction of safety awareness programs for employees and community.







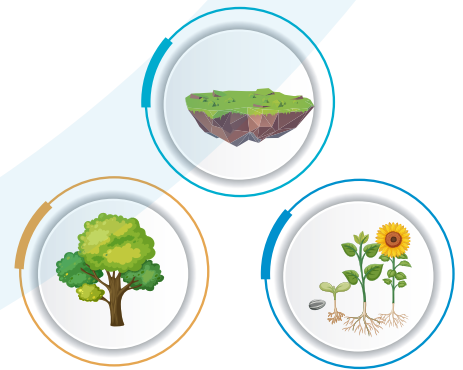
LAND USE

How it is now?

The pipeline traverses 8 regions, 24 districts, 116 wards and passes near an estimated 231 villages and hamlets concentrated along national and secondary roads. The main livelihoods in the project area are based on subsistence agriculture (crop farming, moving animals across pasture and sedentary livestock farming) and small-scale mining. The number of people involved in moving animals looking for pastures has gone down due to several factors including limited grazing land and the extension of game reserves. Small-scale mining in Tanzania focuses mainly on high-value minerals such as gold and gemstones. Other minerals extracted include salt, limestone, kaolin and gypsum. Natural resources play a vital part in the subsistence of rural communities, providing energy for cooking, food security, and construction materials for shelter, medicine and income. the water. Population growth will increase the need for domestic consumption of groundwater.

What will be the effects?

-  Taking people's farmland, moving their houses and other structures.
-  Reduced access to land for farming, livestock grazing; reduced access to marine livelihoods.
-  Existing land conflicts may get worse as most landowners lack certificates of customary rights of occupancy.
-  Small scale mining activity may be affected in Tabora, Shinyanga and Geita regions.



What is going to be done about it?

The project will compensate people for land, trees, crops and structures according to Resettlement Action Plans. It will assist with the restoration of livelihoods of those affected through Livelihood Restoration Programs including supporting people to get replacement land. Extra support will be provided for vulnerable people. The contractor's use of land will be restricted to the agreed working areas.

SOCIO-ECONOMICS

How it is now?

In the project area, trade in retail merchandise and agricultural produce, and provision of services play an important role. Local economic activities are predominantly small-scale and informal. Coastal communities rely mostly on fishing and gleaning. Settlements often have a central trading place. The population is rapidly increasing, causing pressure on natural resources and social services. Regions such as Geita, Tabora and Shinyanga experience high levels of immigration from neighboring nations especially refugees fleeing conflict in the Great Lakes region.



What could be the potential effects?

1

People leaving their normal livelihood to pursue project employment thus reducing agricultural production and food security.

2

Higher demand for goods and services during construction leading to increased, possibly reduced availability of goods in the local economy.

3

People coming into areas may increase competition for available job opportunities and other economic activities such as trading activities.

What is going to be done about it?

The project will ensure a fair and transparent recruitment process - casual workers will be recruited locally to discourage people from moving into the area. Local people will be encouraged not to leave their daily economic activity as the project will recruit a small amount of people for short durations.

ARCHEOLOGY AND CULTURAL HERITAGE

How it is now?

There are no known nationally or internationally recognized critical cultural heritage sites in the project area (as defined by some key international organizations). Onshore archaeological sites have been identified, including those associated with pottery, stone tools, rock-art and evidence of iron working. Unobservable cultural heritage is linked to individual and group identity and therefore sensitive to cultural change. Examples include sacred sites, traditional dances, rituals involving ancestors, traditional healing and medicine, meeting places and sacred rivers. Other important features are likely to be identified by further consultations with local communities. Offshore, there are no cultural heritage sites within the area of influence.



What could be the potential effects?

The traversing of the pipeline in the area may limit access to areas/structures/artefacts of cultural importance. There may be a cultural clash with new comers because of the different value systems and beliefs, and there may be some disruption of access to places of worship or belief.

What is going to be done about it?

The project team will identify and protect any artefacts from damage during construction. The relocation of cultural sites and graves will be carried out in consultation with local leaders, communities and families. In the case of any grave removals being needed, compensation will be paid according to the law. Awareness programs will be carried out for project employees on the importance of respecting community's cultures.

BIODIVERSITY

How it is now?

The majority of the project goes through areas which have been changed by humans. These agricultural and pasture lands do not hold high value for biodiversity. Some areas are natural habitats and some of these are protected by law and are unique to Tanzania. There are threatened habitats that are sensitive to change. Most of these areas have been avoided during routing of the pipeline. The land needed for the coating facility is mainly used for farming. However, this area is within the central and eastern miombo woodland region, which extends across ten countries in central and southern Africa. Chongoleani peninsula is included in the East African Coastal Forest Endemic Bird Area and biodiversity hotspot. Habitat clearance for grazing, crops, wildfires and timber are the main threats to coastal forest and this trend is likely to continue. Large areas of the land proposed for the storage tank facility have already been changed by agricultural activities and are therefore classified as semi-natural.

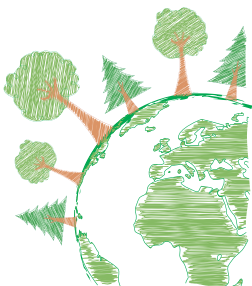


What will be the effects?

Wildlife and vegetation will be affected by noise and vibration; terrestrial wildlife and aquatic life could be affected by project activities. Additionally, land acquisition could also have an effect on biodiversity.

What is going to be done about it?

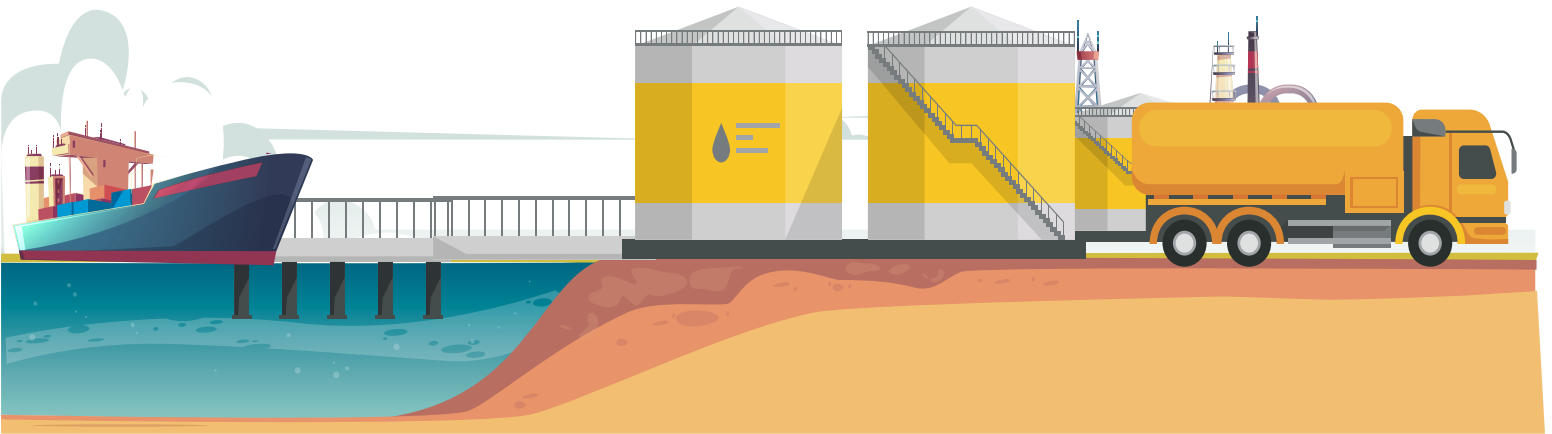
Project actions designed to avoid loss of biodiversity will be implemented. These actions will include education for project personnel and community members, conservation programs to enhance biodiversity and programs will be developed to achieve an overall positive benefit to biodiversity.



MARINE ENVIRONMENT

How it is now?

The Tanga coastline has rich biodiversity and conservation value. The Tanga region has a number of nationally and internationally recognized including Tanga Coelacanth Marine Park (TCMP), Ulenge and Kwale Island Marine Reserve, Tanga North-Kibo Saltpans and a number of community based coastal management initiatives. The majority of the Tanga coastal area is subject to human pressures from increasing urbanization and community livelihood activities. Unsustainable fishing practices, coastal deforestation and agricultural activities which introduce sediment and other pollutants affect the marine environment. These impact the available marine resources which the environment and the population depend on. A substantial part of the Tanga coastal population depend directly or indirectly on marine fisheries for their livelihood, more than on agriculture.



What will be the effects?

The Project will generate impacts on terrestrial, marine and intertidal habitats (including coral reefs, seagrass and mangroves) and concerns on species of conservation concern (including fish, marine mammals and other megafauna (turtles, cetaceans and dugongs), birds, plankton, mobile fauna.

What is going to be done about it?

The Project will manage impacts to the marine environment during and after construction. Mitigation will include construction techniques that minimize noise and vibration. Techniques that minimize sediment generation will be used to reduce impacts of sedimentation during construction. Marine mammal observers will stop work if mammals are seen nearby. Project is actively working with the Government of Tanzania to include the Project in its Oil Spill plan. The Project will use additional conservation initiatives to enhance the marine environment and protect the biodiversity of Tanga Bay.



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