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Kampala Industrial and Business Park Infrastructure Scheme

ESIA Volume I: Non-Technical Summary

June 2019

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Contents

Non-Technical Summary

Introduction

The Government of Uganda, through the Uganda Investment Authority (UIA), is supporting the development of the Kampala Industrial Business Park (KIBP), a major business and industrial park located 11 kilometres east of Kampala at Namanve. The proposed development will be a model business park, creating a business hub for a range of industries in a single location. The KIBP will ultimately be the largest such development in Uganda, covering an area of approximately 890 hectares (ha).

This summary presents, in non-technical language, the findings of a detailed Environmental and Social Impact Assessment (ESIA) that has been undertaken by Queensland and Leeds Ltd. to assess the provision of infrastructure to support the KIBP and thereby enable its continued planned growth. The main ESIA document should be referred to for full information regarding these assessments, beyond what is presented in this summary.

Location

The KIBP is situated in Wakiso (Kira Municipal Council) and Mukono Districts, on the eastern side of Kampala to the north of Lake Victoria. It lies north and south of the Kampala-Jinja Highway and the Kampala-Mombasa railway, and it is proposed to connect to both.

The Namanve River runs through the KIBP.

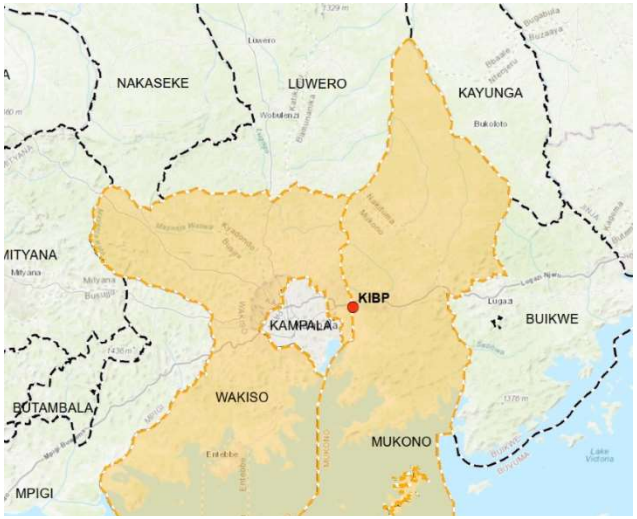

Figure 1 Location of KIBP

The Namanve Forest Reserve is located to the south, with the KIBP proposed to take 0.95km^2 of this area. The region surrounding the KIBP is largely made-up of local communities that rely on the undeveloped area for farming.

The Scheme

Overview

The KIBP has been divided into four Sectors in order to facilitate development in a staged approach: North; South A; South B; and South C (see figure 2). These areas of land within the KIBP have been allocated to be developed by individual contractors and individual plots to be used by different operators for a mix of industries and businesses. Parts of the KIBP have already been in operation for several years, with a mix of businesses present across several areas of the site.

To enable development of the park, the establishment of infrastructure components for the overarching KIBP are required: upgrade of roads, water supply, sewerage works and

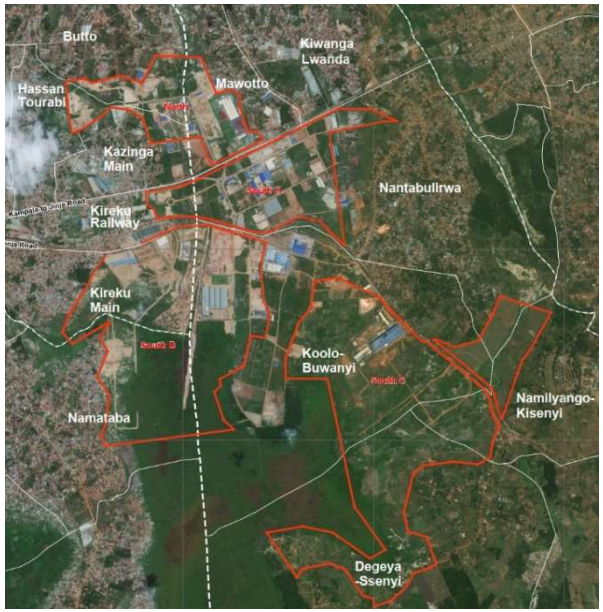

Figure 2 KIBP Site and Sectors

waste treatment[1], power supply, and telecommunications. These infrastructure components comprise the assessed scheme for the ESIA.

As the development of privately-managed individual plots are subject to their own ESIA, they are not considered within the assessment.

The impacts considered in the assessment include those likely to occur during both the construction phase and operational phase of the scheme.

Need for the scheme

The KIBP forms part of Uganda's aspiration to transform into a leading exporter in the wider region, as well as globally. It is considered that well-designed infrastructure will serve as a launch-pad to support Uganda's economic development. The KIBP will comprise development of industrial and commercial space, providing better zoning between residential areas and industrial areas than other parts of Kampala.

It is planned that the KIBP will create a business hub for similar industries in a single location, providing economic efficiencies. The employment opportunities offered by the KIBP would enable improved job opportunities for potential future employees living in the Kampala region.

The scheme cannot be developed without the provision of infrastructure. The KIBP will be unable to develop without:

- Being able to transport people and goods to, from, and within the KIBP;
- A clean water supply;
- Removal of solid and liquid waste;
- Drainage; and
- Provision of telecommunications.

Therefore, the scheme for this infrastructure is required to enable the KIBP to reach its planned scale, and the ESIA and this NTS consider the environmental and social effects of this infrastructure development (noting that solid and liquid waste management will be part of a future assessment and is therefore only considered at a high level as part of this ESIA).

The Assessment

The ESIA for the scheme has been undertaken to comply with relevant Ugandan legislation, and has followed international best practice guidance for the development of ESIAs (and particularly IFC Performance Standards). The assessment has taken into consideration the existing environmental and social baseline and the way this may change due to the scheme and identifies measures that can be used to reduce the effects that these changes may have.

This ESIA has taken into account, and validated when relevant, previous ESIAs undertaken for the scheme in 2002 and 2008.

Assessment Topics

The assessment has been broken down by environmental topic to reflect the scope of the ESIA, approved by the National Environment Management Authority (NEMA) with approval letter signed on 31st May 2019.

. The following topics included are as follows:

- Air Quality
- Biodiversity and Conservation
- Geology and soils
- Greenhouse Gases
- Cultural Heritage and Archaeology
- Landscape and Visual Amenity
- Noise and Vibration
- Socio-Economic Characteristics
- Traffic and Transport
- Waste and Materials Management
- Water Resources
- Cumulative Effects

Air Quality

An assessment has been undertaken to consider the potential air quality effects associated with the construction and operation of the scheme. Kampala and Jinja include residential areas, unpaved roads, high commercial activities, small scale manufacturing and high volumes of traffic. The ESIA has

[1] Waste water treatment plant and solid waste management facilities will be subject to individual ESIA once detailed design of this infrastructure is available. However, high level analysis of these facilities is also included in this ESIA to allow the assessment of interaction between different components and cumulative effects.

found that existing air quality is poor in the area, especially in the vicinity of these two important roads.

Relevant measures from international guidelines will be included in the scheme's Environmental and Social Management Plan (ESMP) to control levels of dust. Emissions from on-road and off-road vehicles in both construction and operation phases will comply with national requirements and relevant measures from the *EHS Guidelines for Air Emissions and Ambient Air Quality*. The opening of the Jinja Expressway will also improve air quality as traffic generated by the KIBP will have an alternative route to entering and leaving the site; this is anticipated to lead to large improvements in air quality along the Jinja Highway and the Old Jinja Road.

Following the implementation of the above mitigation. the construction effects on local residents and community facilities within 500m of the KIBP will be minimised for air quality (dust and emissions). During operation, the development of the Kampala - Jinja Expressway will minimise any effects on the local community.

Biodiversity and Conservation

The biodiversity assessment considered effects upon habitats, plants and animals and surveys were undertaken within a 2km buffer of the scheme footprint. There are six legally-protected areas within 10km of the scheme; the Namanve Forest Reserve overlaps with 0.95km^2 of the KIBP site whilst all other reserves are located over 2km from the site. The Namanve reserve provides habitat for a range of species of plants and animals.

Measures will be implemented during construction and operation of the scheme to reduce or remove the potential effects on biodiversity. These include the following:

- On-site use of pollution prevention measures to control accidental release of pollutants;
- Dust-controlling measures such as using water to dampen roads and avoid dust from moving vehicles;
- Noise-reduction measures such as prioritising noisy activities to be undertaken in the daytimes;
- Scheme footprint designed to minimise overlap with wetland habitats;
- Implementation of a hunting ban by both construction and permanent staff;
- Production a Biodiversity Action Plan to inform survey schedules and species specific mitigation; and
- Measures to prevent the spread of invasive species, captured in an Invasive Species Management Plan.

Some construction and operation activities have the potential for negative effects on biodiversity even after the implementation of suitable mitigation measures. This is primarily due to the impacts of the scheme on the wetland habitats and the bird and mammal species present within the area. As a result of the scheme, there is potential for:

- Habitat loss of the Namanve Forest Reserve and as such the species that rely on this habitat;
- Pollution of Lake Victoria from effluent, spread of invasive species and increased water consumption;
- Pollution of the River Namanve from effluent, spread of invasive species and increased flood risk; and,
- Loss of plant and animal species due to habitat degradation, increased human activity including hunting and poaching, and KIBP industrial activities.

Geology and soils

As part of the ESIA an assessment of the effects of the scheme on geology and soils underlying the KIBP has been undertaken. The site of the scheme is within the northern catchment of Lake Victoria. Underlying bedrock generally not exposed at the surface and overlain by various soil types such as well drained murrum based soils on higher ground with less permeable clay-based soils in the valley regions. The clay and sand found within the area is used for brick making by locals. There are no major fault lines within the project site, however there is seismic activity in the Kampala area. Five soil samples were taken from locations around the site area. Based on the results obtained, the soils tested appear to contain very low levels of the limited suite of metals for which analysis was performed.

Impacts on the underlying soil and geology will be readily prevented through implementation of the following mitigation;

- Preventing spillage and leakage of materials likely to pollute air, soils and watercourses via methods such as:
  - Best practice techniques for the refuelling of machinery,
  - The use of spill kits,
  - Storing hazardous chemicals safely and securely, and
  - Minimising soil erosion by using berms and silt fencing;
- Preventing soil erosion by using efficient drainage systems;
- Reinstatement plan including actions such as removing all pavement surfaces, spreading previously stockpiled topsoil, replanting and its watering and maintenance;
- Avoiding soil compaction by using existing roads;
- Directing surface run-off away from roads by installing side and mitre drains; and
- Measures to protect against impact to human health including:
  - All site staff to be trained to recognise land quality issues;
  - Use of standard protective equipment;
  - Secure construction site; and
  - Robust emergency procedures.

Following the implementation of the above mitigation the construction and operation effects on geology and soils will be minimised to an acceptable level.

Greenhouse Gases

An assessment was undertaken on the potential Greenhouse Gas (GHG) emissions associated with the construction and operation of the scheme. In Uganda, land-use change is the largest source of GHG emissions due to forested land being replaced by crop and bush coverage. Agriculture is also a large source of GHG emissions.

To reduce the overall GHG emissions, mitigation will be implemented during construction including using recycled materials, sourcing materials locally, and establishing sustainable construction management practices. During operation, mitigation will include high fuel efficiency and ensuring all vehicles used to transport workers to the site are filled to maximum capacity. Measures to monitor GHG emissions annually in line with international guidelines will also be implemented.

Despite the implementation of these mitigation measures, the scheme will lead to emission of GHGs, especially during the operation phase due to enabling the increase of traffic to and from the site.

Landscape and Visual Amenity

A Landscape and Visual Impact Assessment (LVIA) has been undertaken to assess the level of impact of the scheme on the surrounding area. The area where the KIBP is located is mainly low-lying, surrounded by low hilltops and valleys. The area surrounding the site is mainly made up of residential homes in Wakiso and Mukono. Kampala is located to the west of the site. The vegetation in the area is mainly made up of crops grown by the local community, wetlands habitat, swamp and the Namanve Forest Reserve.

During construction, mitigation measures will be implemented to reduce the potential effects on the surrounding landscape. These include:

- Using industry best practice to reduce dust;
- Avoiding unnecessary loss of vegetation; and
- Construction will only be undertaken during the day.

In addition, the following measures will be implemented during both construction and operation:

- Using aesthetically discrete perimeter fencing;
- Mitigation planting;
- Lighting will be designed to minimise light pollution;

Due to the large scale of the scheme, there are few options available for mitigation during the construction and operation phase, and therefore following implementation of the above mitigation, there is still potential for the visual amenity of the area will be affected by further removal of wetland vegetation, increase in HGV movements, and the building of the scheme itself.

Noise and Vibration

Noise and vibration effects have been assessed for residential properties, places of worship and existing industrial and commercial properties within the assessment area of the scheme. A noise study from May 2019 concluded the main sources of noise within the area of the KIBP as being:

- Road traffic;
- Construction and light industrial activities;
- Occasional rail movements on the Mombasa-Kampala railway;
- Pedestrians, animals and birdsong; and
- A church public address system.

As a minimum, international guidelines on noise levels will be followed during both construction and operation. Further mitigation measures will be implemented. To reduce noise levels during the construction phase, mitigation measures include:

- Undertaking construction using best practice including temporary site hoardings, restricting access to the site and undertake noisy activities during the day;
- Minimise any traffic associated with construction from travelling through villages and towns;

During operation the following mitigation will be implemented:

- Ensuring the scheme is laid out in a way which has the least impact on noise levels in the surrounding area;
- Use low noise level equipment;
- Design and install screening for fixed plant that will likely exceed recommended noise levels; and
- Use lower-noise road surfaces.

Following the implementation of the above mitigation the temporary construction effects on the local community will be reduced, however there is still potential for the effects from the increase in noise to be felt by the local community. During operation, the effects of noise from fixed plant and road traffic is expected to be minimal following the implementation of the mitigation.

Socio-Economic Characteristics

The area assessed for socio-economics comprises of the two neighbouring districts of Kampala - Mukono and Wakiso, and the respective villages within these municipalities. The immediate area surrounding and including the KIBP is also included within the assessment.

Health services are available in both districts; however, these services are over-stretched. Both Mukono and Wakiso districts provide range of educational facilities from primary to post graduate, however most primary schools in villages are private institutions. Both districts are connected to the national water supply network, however some areas such as Goma still have a high percentage of households without access to safe water. There is still inequality in opportunities available to women in comparison to men and women face more vulnerability from HIV/AIDS, domestic abuse and physical violence.

The site of the scheme itself is not inhabited. However, the surrounding area is heavily populated with houses. The surrounding communities have a diverse range of ethnic groups. The main economic activity in the Wakiso and Mukono districts is farming. Locals living close to the scheme are also employed in the operational factories of the KIBP. Most of the undeveloped land of the KIBP is used for informal farming. Vulnerable people identified in the area include:

- Households living in poverty (international standards dictate this as being less than US$1.90 per day);
- Households headed by women;
- Households headed by the elderly (aged 60 and above); and
- Disabled or seriously sick people.

The scheme has the potential for negative effects on the social aspects of the communities even after the implementation of suitable mitigation measures. There is potential for:

- Economic displacement from households taking up new livelihood activities; and
- Health and safety risks throughout the life-time of the scheme considering the large size of the workforce.

The scheme will, however, have potential for positive effects on communities such as:

- Employment of local people from construction through to operation;
- Use of local materials and business; and
- Improvement of roads and access for local communities.

The scheme sponsors will be responsible for ensuring that a range of management measures are implemented to protect local communities and those working on site. These measures include several different strategies and plans, which will ensure:

- Assessment and compensation of economic displacement impacts on those people informally using the site and its natural resources for livelihood activities, within the current boundaries of the KIBP.
- Management of the environment, traffic, and labour;
- Minimisation of displacement impacts and mitigate the effects of the migration of people;
- Management of stakeholder and community relations;
- Fair management of workers;
- Inclusion of local people and businesses; and
- Contractors follow regional, national and international health and safety requirements and guidelines.

Cultural Heritage and Archaeology

The scheme area was formally a forest reserve with limited/no development. There are no buildings of historical or architectural importance for Uganda within the KIBP boundary.

Enquiries with stakeholders in cultural departments showed that the site is not an area for cultural rituals and ceremonies. Cultural resources close to the site, such as the Namugongo Christian Martyrs Shrine the Kabala of Buganda Palace at Kireka hill and the Kabaka of Buganda palace at Banda on top of Kyambogo Hill were assessed; however, the site is considered far enough away from these heritage resources for it not to have a negative effect on them.

To prevent affectation to potential unexpected underground cultural resources, a 'chance finds' procedure has been developed and included as construction management plan so that excavation works are be halted should something of interest be encountered whilst further investigations are undertaken.

The assessment identifies that the scheme is unlikely to have effects on heritage assets.

Water Resources

The water resources assessment considered pollution to both surface and groundwater as a result of construction and operational activities. In addition, a separate Flood Risk Assessment forms a supporting document to the main ESIA. The KIBP falls within the Namanve catchment which eventually drains into Lake Victoria. The Namanve River flows through areas of the site which can often flood during the rainy season and there are three groundwater springs near the southern area of the site which are used by the local communities. Due to these factors, the KIBP site is at risk of flooding during periods of heavy rainfall.

Measures will be undertaken during construction and operation of the scheme to mitigate the potential effects on the surrounding water network. These include the following:

- Best practice site management and planning the site layout to minimise the risk of pollution incidents including:
  - Safely and securely storing potentially harmful substances,
  - Suitable removal of waste,
  - Water channels will have buffer zones installed to reduce solid material entering watercourses,
  - Designated areas for cleaning of construction equipment, machinery and vehicles, and
  - Dust suppression methods; and,
- Mitigation measures to reduce surface runoff such as installing pavements that allows water to pass through, installing swales to filter pollutants, and planting of vegetation and wetlands.

Following the implementation of the above mitigation measures, the likelihood of the negative effects occurring on the Namanve River and within the surrounding catchment will be reduced. However, due to the industrial nature of the scheme and the overall increase of hard-surfaces as a result of its construction leading to greater run-off, any pollution incident could still have great effect on the water features within the catchment and beyond.

Traffic and Access

The traffic and access assessment determined the potential impact of the scheme on the surrounding transport infrastructure. The Kampala-Jinja Road is the main highway linking Uganda with countries to the east and west, and also the main access for construction and operation traffic to the site. The KIBP will highly contribute to the densification of existing road network around the KIBP, which currently suffers from congestion.

Mitigation measures will be implemented to reduce the effects of the scheme on the traffic and transport network. Mitigation measures include:

- During construction there will be a Transport Management Plan implemented including traffic diversions and proposed delivery routes; and,
- During operation:
  - Implementation of Transport Management Plan including a shuttle service to allow public transport service within the site,
  - Junction and road improvements on Old Kampala-Jinja Main Road,
  - Rail sidings to reduce cargo being transported on roads, and
  - Detailed parking design.

Post-mitigation, an increase in congestion, reduced safety on the access roads and reduced parking provisions are still likely to be permanent effects.

Waste and Materials Management

The materials and waste assessment has been undertaken to identify the impacts related to materials and waste management of the scheme during construction and operation. The appointed contractor has stated that materials will be sourced when required and will be sourced from the contractors own quarries or locally where feasible. The contractor's mineral quarries are located in the Semuto – Kapeeka area. The contractor's gravel/rock quarry and crushing facility is located 6km east of Semuto, a settlement located 62 km north-west of the KIBP. In terms of removing the waste, waste-generating occupiers of the KIBP use NEMA licensed waste contractors to remove waste produced within the site. The KIPB does not currently provide a waste management facility for its existing occupants. New occupants proposed using waste collectors to remove their solid waste.

Mitigation will be implemented to reduce the effects of the scheme relating to materials and waste. Mitigation measures include:

- Licensed contractors removing of existing waste;
- Construction Waste Management Plan including details of the final disposal site/landfill to avoid illegal waste dumping;
- Site Waste Management Plan;
- Materials Management Plan detailing amounts of materials needed and details of where they are coming from and the seller; and
- Site Waste Management Strategy to identify the machinery that handles waste for re-use, recycling and disposal.

Post-mitigation, there is likely to be an increase in the waste generated and therefore a reduction in the space available in landfills for disposal of any waste from the KIBP.

Cumulative Effects

As part of the assessment a review of existing projects in the area of the KIBP was undertaken to determine the effects of the KIBP scheme and any other scheme in the area that is under development will have together on the surrounding areas. It considers the impacts on the area should all schemes be constructed and operated at the same time. The known projects in the area that are proposed for development are:

- Kampala-Jinja Expressway;
- Standard Gauge Railway; and
- Bukasa Port.

The three projects listed above, in addition to the KIBP infrastructure scheme, will have an effect on all of the environmental topics discussed previously in this document to a varying degree. As all four schemes are assumed to be

constructed and operated in close proximity to each other over similar time periods, the cumulative impacts of these are anticipated to negatively affect:

- Air quality due to concentrated effects on local air quality;
- Visual amenity due to construction traffic and construction sites. The schemes will also result in additional permanent structures from the current baseline affecting the future visual amenity of the area;
- Habitat loss due to the construction and operation of the Kampala-Jinja Expressway and KIBP, resulting in habitat loss and degradation of the Namanve Forest Reserve and wetlands;
- Lake Victoria, wetland swamps, the River Namanve, other surface water bodies and groundwater due to their vulnerability from potential pollution incidents; and
- Plants and animals due to the effect of reducing the quantity and quality of the habitats and bringing humans in closer contact.

Good communication between the sponsors for the four schemes will be key to managing the cumulative effects described above. There are uncertainties surrounding the other schemes discussed here due to limited information being available at present, so a flexible approach will also be important.

Environmental and Social Management Plan

As part of the ESIA, an Environmental Site Management Plan (ESMP) has been written to show the plans and systems to be implemented to address the impacts identified in the ESIA. The aim is to provide a consistent approach to the management and reduction of the risks and impacts associated with the construction of the scheme.

The plan is separated into 4 sections providing the following:

- An outline of the institutional arrangements that's the ESMP will be implemented and the responsibilities between the project sponsor: UIA and the contractor: Lagan-Dott.
- Training requirements for each contractor and people associated with the management of the scheme.
- An outline of additional studies and site-specific management plans which will be required to avoid, minimise and compensate for the impacts identified in the ESIA. These additional studies and plans to be developed by UIA and Lagan Dott include:
  - Additional studies required to inform detailed design and Construction Environmental and Social Management Plan (CESMP).
  - Sub-plans to be included in the CESMP. To be finalised prior to any site preparation and construction works
  - Sub-plans to be included in the Operational Environmental and Social Management plan (oeSMP). To be finalised prior to operation commencing.
- An overview of monitoring and reporting requirements associated with the activities and commitments within the ESMP.

Specialist studies included in the ESIA

The development of the ESIA has included specialist studies that will need to be further developed after the ESIA has finalised, and prior to any site preparation and construction works:

- Preliminary Flood Risk Assessment (FRA). Provides a high-level assessment of the flood risks posed to the Scheme and suitability of the proposed development in relation to flood risk; and providing recommendation of the modelling approach and other activities required in the next phase (full FRA) based on the flood risk conceptualisation and data availability.
- Preliminary Livelihood Restoration Plan. Presents the findings of the socioeconomic and asset census surveys undertaken as part of the ESIA process, provides a socioeconomic baseline profile of the displacement affected people and households, and details the Project's livelihood restoration policy commitments and entitlements for affected people
- Stakeholder Engagement Plan. A strategic document for planning a comprehensive and culturally appropriate approach to consultation and disclosure. It covers the lifecycle of the Scheme, and therefore all project phases: is has been used during the Environmental and Social Impact Assessment (ESIA) scoping and ESIA phase, and will also be used post-ESIA submission, as well as the for construction and operation phases.

What Happens Next?

NEMA is the Ugandan authority who will review the ESIA and make a conclusion as to whether or not to approve the scheme, considering the environmental and social effects.

Prior to making a decision on the planning application, NEMA will distribute the ESIA and its corresponding documents to institutional stakeholders for their review. Once environmental and social experts have reviewed the application the ESIA will be published on the project sponsor's website (UIA): http://www.ugandainvest.go.ug/ . It will also be distributed to public libraries and district headquarters in areas where the scheme is located for local communities to read and send feedback directly to NEMA. NEMA has the option to have a public hearing about the scheme where consultants would present findings and provide local people to give more feedback, however this is at the discretion of NEMA.

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