

# KIGALI FAECAL SLUDGE TREATMENT PLANT PROJECT

February  
2022

## KEY INFORMATION

- ◆ A High Priority Investment for the City of Kigali, Rwanda
- ◆ Water and Sanitation Sector
- ◆ Implemented by the Lake Victoria Basin Commission through the Integrated Water Resources Management Programme for the Lake Victoria Basin – (LVB IWRMP)
- ◆ Co-funded by KfW, the European Union, and the Republic of Rwanda
- ◆ KfW and EU grant funding: EUR 7,50 million
- ◆ Partners: Ministry of Infrastructure, Water and Sanitation Corporation (WASAC), Rwanda Ministry of Environment (MoE)
- ◆ National contribution: EUR 1.21 million
- ◆ Expected implementation period: 2022-2025



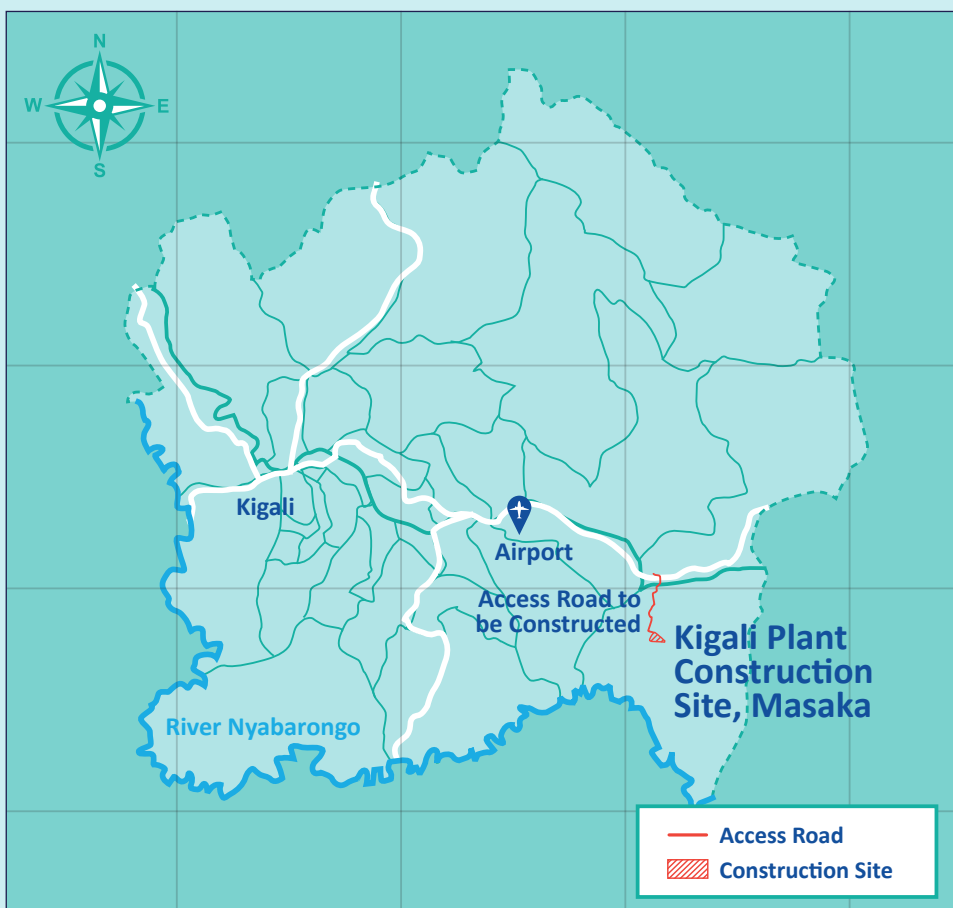
## OUTCOMES

- Access to sanitation is improved for approximately 1.8 million additional people in Rwanda (Kigali) after 10 years of operation
- Biochemical Oxygen Demand inflow into the Lake Victoria Basin reduced by 0.67 tonnes/day through the plant



## OBJECTIVES

- To contribute to the goal of providing 100% coverage of sanitation services to the population of Kigali by 2024
- To reduce pollution in the Nyabugogo River, a tributary to Kagera River, which contributes to the improvement of water quality in Lake Victoria
- To sustainably manage sewage collection and disposal in the City of Kigali
- To strengthen the capacity of the Rwanda Water and Sanitation Corporation (WASAC) to operate a Faecal Sludge Treatment Plant
- To substantially reduce the negative environmental impact of raw sludge being dumped at Nduba solid waste landfill in Kigali
- To sensitise urban communities about the benefits of improved sanitation for the enhancement of public and environmental health



## Kigali Faecal Sludge Treatment Plant



## BACKGROUND

The City of Kigali has sewerage management practices that need to be revised and upgraded to meet the city's growing population. It is estimated that 92% of Kigali's population rely either on pit latrines or septic tanks as sanitation facilities, while 7 % use semi-centralised systems.

The Kigali Faecal Sludge Treatment Plant (FSTP) is therefore considered a High Priority Investment project under the LVB IWRM Programme. It is based on a two-step approach, with liquid-solid separation as a first step and the treatment of liquids and solids as a second step. The plant will fully comply with Rwandan effluent standards.

Based on the assumption that the maximum faecal sludge collection will be reached by 2035 with a total collected quantity amount of 483 m<sup>3</sup> per calendar day, the faecal sludge treatment plant will be implemented with a treatment capacity of 500 m<sup>3</sup> per day allowing for an annual 300- day operation. To allow operational flexibility and to ensure proper maintenance, a two-lane plant operation is envisaged. After treatment on sludge drying beds and an extended storage of two months, the bio-solids should reach a quality that will at least allow for restricted use in agriculture. The quality

after treatment also allows for the disposal of the sludge at a controlled landfill if re-use options cannot be implemented.

The project further envisages assessing the technical and financial feasibility of the options: "fuel production" and "composting" at "pilot scale" with either of them processing 10% of the sludge treated at the plant in total.

The final design of the plant will be developed in two steps: At first the preliminary design, involving local authorities and thereafter the detailed design to achieve readiness for construction. During the Preliminary design phase several process options will be investigated and agreed upon.

The detailed design and costing for the project will be developed by the bid-winning contractor and form the basis for project implementation. Once the plant is constructed, a period of operation by the contractor will be considered and will involve training staff at WASAC in operational aspects.

The Lake Victoria Basin Commission (LVBC) has so far secured a EUR 7.5 million (EUR seven million five hundred thousand) grant from both BMZ/KfW and the European Union for the project.

## INVESTMENT COSTS AND FINANCIAL CONTRIBUTION

The total cost for the construction of the projected FSTP is estimated to be EUR 8.11 million excluding VAT. Out of this amount, the cost of the access road and the land acquisition will be paid for from the national counterpart contribution to the Project, jointly amounting to an estimated EUR 1.21 million and representing nearly 15% of the total amount. 18% VAT will also be covered by the national contribution. The remaining amount from the grant amounting to EUR 0.6 million will be used for operating the plant in its initial operation stage.

ITEM	TOTAL MILLION EURO	LOCAL CONTRIBUTION MILLION EURO	KFW/EU MILLION EURO
Faecal Sludge Treatment Plant	6.276		6.276
Costs for land acquisition	0.547	0.547	
Improvement of access road	0.550	0.550	
Contingencies	0.737	0.110	0.628
<b>Total investment excluding VAT</b>	<b>8.110</b>	<b>1.206</b>	<b>6.904</b>
<b>Percentage</b>		<b>14.9%</b>	<b>85.1%</b>

