



COUNTY GOVERNMENT OF KILIFI

Pre-Feasibility Study

for

Development of Fire Station Infrastructure

in

The Municipality of Kilifi

OCTOBER 2019

A. Background

The County Government of Kilifi (CGK) requested funding from the World Bank (WB) in the amount of US\$0.97 million to finance the “Development of a fire station Infrastructure for the Municipality of Kilifi”. The project development objective is to support improvements to fire rescue and emergency Responses in the Municipality through construction of a sustainable firefighting infrastructure and facilities.

B. ABOUT KILIFI FIRE STATION DEPARTMENT

The department serves a population of approximately 150,000 residents within its coverage area. It provides a wide range of services to the community, which includes:

1. Fire suppression
2. Technical rescue
3. Hazardous materials response (awareness and operations)
4. Building, fire and life safety inspections
5. Community code enforcement
6. Education and fire prevention
7. Emergency management and disaster response
8. Training and education

C. OBJECTIVES FOR THIS PRE-FEASIBILITY STUDY (PFS)

Accordingly, the Municipality of Kilifi developed a comprehensive plan for technical assistance in the firefighting sector, with the following two broad objectives:

- a) Provide a recommended integrated and sustainable fire and emergency response and management system for the Municipality; and
- b) Prepare a pre-feasibility study for the most appropriate technology and innovations in construction of the fire station infrastructure for the Municipality of Kilifi.

(Specific Objectives)

The objectives of this PFS are:

1. Elaboration for prioritized urban infrastructure investments in the area of domestic/industrial wastewater and storm water network facilities in the Municipality of Kilifi, including a climate change adaptation (flood prevention) component in Kilifi Municipality).
2. Support to develop/present Priority Projects regarding industrial/domestic wastewater treatment and drainage systems to the market and identify innovative financing options through the commercial, private sectors and/or international lending institutions.

There is an urgent need for development of a new fire station for the Municipality of Kilifi due to the regular fire accidents and road accident emergencies. In addition, the increased population and developments in the Municipality of Kilifi is a considerable factor for the development of a new fire station. The current fire station infrastructure is in a very poor condition and urgently need rehabilitation, upgrading and extension. The public are currently at risk if there be any serious fire emergencies either at the residential, commercial, educational or industrial facilities. Public health and the environment are seriously at risk. Due to this, any intervention in the fire management sector must aim at sustainably addressing the described problems by defining comprehensive, but also realistic objectives.

These studies are a continuation of the Municipalities effort to improve its emergency, health, development and safety goals. The on-hand PFS elaborates on the measures which will ultimately improve the habitat and the environmental conditions in the project areas. By following the Terms of Reference (ToR) for this assignment and the World Bank Guidelines, the outputs of this PFS provide the technical, financial, environmental, and social assessments of identified Priority Projects at a level of detail which is sufficient to progress in a subsequent Feasibility Study (FS).

D. SUMMARY OF ANALYSIS

This Report presents details of; -

- (i) the PFS for the Municipality of Kilifi fire station in its entirety,

- (ii) the wide range stakeholders' involvement in formulating an innovative sector strategy, and
- (iii) describes options for the identified Priority Projects and/or scenarios for project implementation of fire response sector investments, including measures for immediate implementation, as well as for capacity development.

Brief Description of Current Situation

The building evaluation presented in this report is based on field observations, review of available construction documents, and discussions with personnel from the facility.

a) Fire station offices and fire engine yards

- ✓ Fire extinguishers, exterior pull boxes and switches are not accessible
- ✓ Overhead doors to the fire apparatus room are too narrow and too low for present equipment; it impedes the department in the procurement of future apparatus and it also hinders the deployment of supplemental support from this facility.
- ✓ The stations administrative spaces are greatly undersized and limited to the fire chief's office, and a diminutive office off of the apparatus bays office serving multiple duties.
- ✓ Currently, the facility other than the kitchen is lacking all firefighter's living space amenities. Spaces such as dining area, day room, locker rooms, fitness room and dormitories are non-existent.
- ✓ The facility does not have a decontamination area. All contaminated equipment is hosed down within the apparatus bay.
- ✓ Current storage areas are tight, with storage overflow occupying mezzanines, mechanical room and attic spaces. Storage of building supplies is scattered throughout the facility.
- ✓ The station in its current configuration cannot accommodate the anticipated growth within the community and within the programmatic requirements of the fire station.
- ✓ Environmental aesthetic of the fire station is not appealing from all angles to the entrance.
- ✓ Currently, there is no separate area for gear storage. Gear is stored in open lockers within the apparatus bay.

b) Water Supply in for Kilifi Fire station

Kilifi Mariakani Water and Sewerage Company (KIMAWASCO) is the only piped water supplier in Kilifi and its surrounding areas, including the project area comprising the fire station. The Fire

station majorly depend on the piped water to carry out its services which is a very big limiting factor when it comes to fire emergency responses.

c) Accommodation units

The station has few residential units for the fire fighters. The houses present are tiny in space, lack several basic commodities of a housing and they are in a very bad civil and structural state. The number of the fire response units with the number of available housing does not match. This hinders the fire stations vision on extensive supply in machinery operation and general fire emergency responses.

E. RECOMMENDED PROJECT STRATEGIES

Project have been identified to improve the urban environmental conditions health and safety in Kilifi Municipality.

- ✓ Procure land for the establishment of a fire station
- ✓ Develop fire station building infrastructures which include offices, fire engine sheds and garages and fire fighting staff houses.
- ✓ Provide Stand-by Power Distribution System with low maintenance cost.
- ✓ Drilling of a borehole to enable a 24hr water supply to the fire engines to enable in combating fire emergencies without exception of providing large water storage tanks for both use in the offices, accommodation units and for the fire engines.
- ✓ Development of an operational emergency call center that operates 24/7. This will enable efficiency in fire emergency compartment at a very urgent time and call and at an early stage. This will save lives and property without forgetting preventing excessive carbon emissions to the environment.
- ✓ Environmental sensitization in the full renovation and development of the fire station with prioritizing environmental beauty, through architecture and designs.

Even though the projects intrinsically are elements of sustainable social development, there are some pre-conditions for obtaining sustainability of the proposed infrastructures. It is not financially viable without a complete re-assessment of fees and funding of storm water management; however, in terms of cost recovery of capital investments and O&M.

Capacity Building Measures

The envisioned sustainable and practical development of the fire station is depending heavily on;-

- (i) technical innovation,
- (ii) appropriate performance criteria and
- (iii) careful consideration to maintain and improve environmental protection.

In this context, it is important to: -

- (i) to support the development of cooperation between the many key players that have to comment or permit initiatives not yet common practice in Kenya, and more importantly
- (ii) to develop feasible management of the fire service systems as well as
- (iii) integrated fire management and monitoring procedures to secure sustainability.

This requires high knowledge and experience being developed through capacity building supported by experts with a combination of international and national leverage.

PPP Opportunity for Fire Station Management

It is expected that this PFS provides

- (i) primary impressions and assessments on residential, industrial, educational and business environments,
- (ii) an overview how current fire management policies, framework and regulations encourage Private Sector Partnerships (PPP), as well as
- (iii) a reflection of possible problems, bottlenecks and risks incorporated particularly with financing and tariffs for conducting urban firefighting infrastructure investment projects in a sustainable manner.

F. TENTATIVE COST ESTIMATES

The overall costs for the measures proposed in this PFS are provided in the Table below. For the Municipality of Kilifi, a centralized fire station infrastructure is considered based on a thorough analysis of local conditions and opportunities and is presented in the table below.

TABLE1: KILIFI MUNICIPAL ANNUAL INVESTMENT BUDGET 2019/2020

S/N	ACTIVITY	TIME FRAME		BUDGET (KSH)			
		Start date	End Date	KUSP	CGK	Other	Total
A	MOVABLE ASSETS (13.46% of KUSP Total)						
A1	Acquisition of office furniture	01 July	31 October	1,500,000.00	-	-	1,500,000.00
A2	Acquisition of project equipment & Operations	01 July	31 October	1,500,000.00	-	-	1,500,000.00
A3	Acquisition of 1 No. Utility 4 by 4 vehicle	01 July	30 November	8,000,000.00	-	-	8,000,000.00
	<i>SUBTOTAL 1</i>			<i>11,000,000.00</i>	-	-	<i>11,000,000.00</i>
B	INVESTMENT PREPARATION: planning, design, costing, and supervision (2.8% of KUSP Total)						
B1	Construction of Fire Station	01 July	30 October	1,400,000.00	-	-	1,600,000.00
B2	Hydrant and a Bore hole	01 July	30 October	1,400,000.00	-	-	1,200,000.00
	<i>SUBTOTAL 2</i>			<i>2,800,000.00</i>	-	-	<i>2,800,000.00</i>
C	PROJECT CONSTRUCTION COSTS (85.23% of KUSP Total)						
C1	Construction of Fire Station	August 2019	June 2020	80,793,668.00	-	-	80,793,668.00
C2	Hydrant and a Bore hole	August 2019	June 2020	2,000,000.00	-	-	2,000,000.00
	<i>SUBTOTAL 3</i>			<i>82,793,668.00</i>	-	-	<i>82,793,668.00</i>
	TOTAL			96,593,668.00			96,593,668.00