THE REPUBLIC OF UGANDA

MINISTRY OF WATER AND ENVIRONMENT

Project Proposal

Emergency Response to COVID 19

For

Water and Environment Sector

March 2020

Project Information Summary

SECTOR	**Water and Environment Sector**
Project Activities:	Emergency Response to COVID 19
Executing agency	Ministry of Water and Environment
Donor Agency	The World Bank
Type of Funding	Grant / Credit
Location	Various districts of Uganda
Project Components and Cost:	**Lot I:** USD 25.0 million Emergency response to water supply and sanitation in rural areas **Lot II:** USD 20.0 million Emergency Response to COVID 19 in Water supply and Sanitation systems under Umbrella Authorities **Lot III:** USD 1,368,421 Water Resources management
Project Purpose:	Address the emergency water supply, sanitation hygiene and environmental needs as a result of effects of COVID-19

Justification	• To improve safe water supply coverage and service levels to the people in the rural communities and public institutions. • To provide water supply systems that will achieve economy of scale, require least cost energy, and sustainably operated and maintained by the community themselves through the Local Authorities. • Existing network of wells provides facilities that can be installed with solar pumps immediately. • Based on the targets for universal safe water access for all under the Sustainable Development Goals **2030** and the Government of Uganda Vision **2040** aimed at attaining middle income status, the government should increase funding for the Rural Water Supply Sub-Sector (RWSS) program to accelerate water supply coverage. There are 57950 villages in Uganda with 35% i.e. 20323 villages without access to a safe water source.
Environmental and Social Impact Assessments (ESIA)	The ESIA shall constitute an integral part of the project. It will be undertaken for the project covering all the components prior to the construction phase.
Water Resources Assessment	Groundwater is the predominant and most viable water resource in rural areas as it requires minimal treatment to achieve the desired water quality. However, groundwater is not an infinite resource, as such, a water resources assessment shall be carried out in the project areas to prevent ground water exploitation and depletion.

Contents

Lot I: Emergency Response to COVID 19 in Water supply and Sanitation systems in Rural areas

PROJECT PROPOSAL SUMMARY REPORT

Project Summary		
1	**Sector**	Water and Environment
2	**Vote**	019 – Ministry of Water and Environment
3	**Vote Function**	09 02- Rural Water and Sanitation
4	**Vote Function Code**	1347 Solar water supply systems
5	**Project Title**	Emergency Response to COVID 19 in Water supply and Sanitation systems in rural areas
6	**Project Duration**	6 months starting May 2020
7	**Estimated Project Cost**	USD 25M:
8	**Geographical location**	Throughout the country
9	**Officer Responsible**	Eng. Joseph Oriono Eyatu; Commissioner Rural Water and Sanitation Department. Telephone: +256 414 221383/ +256 772 591919(mobile) Email: joseph.eyatugmail.com/ Eyatu.oriono@mwe.go.ug

Proposed Project Objective(s)

Sustainable safe water supply and sanitation facilities within easy reach of the targeted population with 80-90% effective use and functionality of facilities as well as and promotion of hygiene practices. Basically, the project looks to accelerate water coverage as well as upgrading the service levels of safe water supply in rural communities and public institutions and improve livelihood of the rural communities.

Specifically:

i) To improve safe water supply coverage and service levels to the people in the rural communities and public institutions using renewable energy.

ii) To reduce walking distance to water points and reduce congestion at water points

iii) To promote sanitation and hygiene practices to prevent the spread of disease.

iv) Institutional strengthening

Justification

33% of the rural population do not have access to water and must resort to unprotected sources of minimum water quality standards. The most deprived population must travel more than 1.5km to collect safe drinking water. It has been established, that adequate access to safe water is imperative in the fight towards preventing the spread of COVID-19.

The rural communities continue to grapple with the challenges of access to water mainly due to the following:

- Inequitable distribution of water facilities
- Low access to safe water
- Insufficient volumes of potable water for meaningful productive purposes
- Increased incidences of conflicts arising from competition to access clean water

Components

Component Name	Cost (US$, millions)
Component 1. Supply and Installation of Solar power energy packages on existing handpump boreholes	8,153,010
Component 2: Extension of existing viable water supply systems	1,425,000
Component 3: Decongesting of Rural Water Points through Rehabilitation of Rural Point Water Sources and Drilling of New Production wells	10,065,000
Component 4: Sanitation and Hygiene Promotion	4,868,421
GRAND TOTAL	**24,511,431**

1. PROJECT CONTEXT

1.1 BACKGROUND

Uganda's population was estimated at over 39 million people (UBOS, 2019). Out of this 81.6% reside in rural areas. As of June 2019, the rural water supply coverage was estimated at 69% on the aggregate. The gap between the total rural population and the rural population served with safe water is significant and increases annual thus creating high water demands. The safe water coverage in rural areas has stagnated over the last four years partly because the funds availed for rural water supply provision is only enough to match the annual population growth in the rural areas.

Groundwater is a predominant water supply resource for rural areas in Uganda harnessed majorly through Hand pumped boreholes. There exist over 60,000 handpump boreholes estimated to serve a population of 15,000,000 persons. The method of using hand pumps can only extract a minimum of 700ltrs per hour which causes delays, conflicts and time wasting hence undermining wealth creation strategy. It is worthwhile to note that a number of these boreholes (50%) have safe yields beyond 4m3/hr which is enough for domestic water.

Further to note, the expenditure on borehole rehabilitation by District Local Governments has been on the increase since FY 2005/6 rising from UGX 0.81 billion to UGX 2.16 billion by FY 2007/8. The average cost of borehole rehabilitation in 2017/18 FY was UGX 8 million . The costs have been rising due to aging of existing facilities. However, despite the increase in funding for major rehabilitation to the districts, the average national functionality rate of rural water facilities was reported as 83% as of June 2018(SPR 2018), down slightly from 82% in 2017/18 (MWE 2018).

As of June 2018, it was reported that out of 28,919 protected springs, 3,149 were nonfunctional (11%); out of 40,269 deep boreholes, 6,149 were nonfunctional (15%); out of 21,565 shallow wells, 5,166 were nonfunctional (24%). In a response to the current global challenge that has been brought about by the Corona Virus, the Ministry – under emergency response – intends to rehabilitate an average of 10 nonfunctioning boreholes in each district across the country. This proposal therefore presents the estimated funding requirement for government to undertake the repair and rehabilitation of 1,330 boreholes (an average of 10 borehole in each district).

1.2 SITUATIONAL ANALYSIS

COVID19, commonly known as the Corona-virus disease is an infectious disease that causes respiratory illness with symptoms such as a cough, fever, and in more severe

cases, difficulty breathing. The disease was identified in late 2019 in China but has since spread fast across the world and was declared a global pandemic by the World Health Organization on 11th March 2020. Uganda registered its first COVID19 case on 21st March 2020. Coronavirus disease spreads primarily through contact with an infected person when they cough or sneeze. It also spreads when a person touches a surface or object that has the virus on it, then touches their eyes, nose, or mouth. One of the measures to prevent the spread of the coronavirus is regular washing of hands with soap and clean water as well as social distancing as the virus is spread through contact with an infected person.

The impacts of the virus are fast and fatal if the pandemic is poorly managed and can be catastrophic if it spreads to communities that are not prepared with the basic measures to prevent the spread of the virus such as regularly washing hands with clean water and soap.

COVID19 is a novel challenge. The fundamental lesson learnt from the current outbreak is that public health should always be at the forefront of all national plans and not just in the wake of an emergency. Access to safe and clean water for all is an integral part in ensuring public health as well as continual sanitation and hygiene promotion campaigns. Considering the above, it is more imperative than ever to equip the communities in the rural areas of Uganda with basic tools to combat any such outbreak through the provision of safe and clean water in close proximity and of upgraded service levels to minimize congestion at water points.

There are several vulnerable persons in rural areas who have no access to a safe water source. Children, pregnant women, elderly people, malnourished people, and people who are ill or immunocompromised, are particularly vulnerable when a disaster strikes, and take a relatively high share of the disease burden associated with emergencies. Poverty is a major contributor to vulnerability. Furthermore, poverty can fuel contagion like the COVID19. Poverty and inequality can exacerbate rates of transmission and mortality for everyone. Access to safe water is directly linked to the alleviation of poverty. There is compelling evidence that improving water and sanitation facilities has beneficial impacts on the social economic status of communities especially in terms of improving outcomes in the areas of health, poverty reduction and education. By upgrading service levels and allowing for piped water supply schemes, water will be taken closer to the vulnerable persons thus increasing access.

2. PROJECT COMPONENTS

2.1 *Component 1 :* Supply and Installation of Solar power energy packages on existing handpump boreholes

This component entails the supply and installation of simplified solar energy packages on existing handpump boreholes. This component looks at reducing the congestion at water points through allowing for multiple water collection points. The simplest system will comprise of a DC powered pump pumping at a rate of 2m^3/hr into a 10,000l or 5000l tank, about 6 solar modules and a minimal distribution not exceeding 200m in any direction to a tap stand.

Long Queues and congestion at water point in Kitgum District

A simplified DC powered solar supply system

Under the emergency borehole drilling managed at the centre, the Ministry has drilled a total of 357 boreholes. These boreholes are going to be the first stock of boreholes to be considered under the initiative. Out of the 357 boreholes drilled, 264 meet the minimum

yield criteria of 0.7m3/hr to be considered for the project. The least served areas shall be considered first.

Table 1: Brief description and characteristics of the proposed upgrade.

Class and Yield Threshold	**Proposed system description and characteristics**	**Schematic presentation**
I Yield range of 0.7 to 1.0 m^3/ hr.	■ Service Level of 250 – 500 people ■ Installed reservoir capacity of 2.0m^3. ■ Reservoir material is PVC (poly tank) ■ Reservoir Height of up to 5meters and single steel stand (pole) ■ Solar array installed above the reservoir ■ A maximum of 4 taps A maximum distribution distance from source of 500m (if the head allows)	
II Yield range of 1.1 – 2.5 m^3/ hr	■ Service Level of 500 – 800 people ■ Installed reservoir capacity of 4.0 - 5.0m^3 ■ Reservoir material is PVC (poly tanks) ■ Reservoir Height of 5meters and single steel stand (Pole) ■ Solar array installed above the reservoir ■ A minimum of 4 taps connected to the system ■ A distribution distance from source of up to 1,000m (if the head allows) ■ Provision for house connection	

Class and Yield Threshold	Proposed system description and characteristics	Schematic presentation
III Yield range of 2.6 – 5.0 m^3/ hr	■ Service Level of 800 – 1,000 people ■ Installed reservoir capacity of 10.0m^3 as minimum ■ Reservoir material is PVC (poly tank) ■ Reservoir Height of 5meters or more steel structure ■ Solar array may be installed at the top of reservoir or at an appropriate location as determined by design ■ Several tap connects ■ A distribution distance only limited by head ■ Provision for house connections	

2.2 *Component 2:* Extension of existing viable water supply systems:

The project objectives are to extend service coverage to the unserved population (by serving all villages within or near the supply area), and to upgrade, expand and renew the existing infrastructure in order to ensure reliable water and sanitation service delivery. The department has constructed 65 solar powered piped water supply systems under ADB funding and 9 (both solar and grid energy) under JICCA funding. 40 have the potential of being extended to reach and serve more people. In addition, the constructed gravity flow schemes can also be extended.

2.3 *Component 3 :* Decongestion of Rural Water Points through Rehabilitation of Rural Point Water Sources and Drilling of New Production wells

This component comprises of 2 sub-components:

A. Rehabilitation of Rural Point Water Sources

The Ministry – under emergency response – intends to rehabilitate an average of 10 nonfunctioning boreholes in each district across the country.

Given the volume of work envisaged and anticipated, a two-prong approach to the execution is proposed in which will include 1) Involving the private sector contractors to carry out repairs on a regional basis and also the Ministry Infrastructure Operation and

Maintenance division's rehabilitation team will also carry out some works for a selected region.

The country will be divided into six regions as demarcated by the departments regional centers and subject to the proximity to the resources and materials, some center-jurisdictions will be handled by the private sector while others will be handled by the Ministry's borehole maintenance crew (Two Units). For effective and efficient operations, temporary creation of parts and materials stores regionally will be required and the project management team will have to implement through a "Force-on-Account" arrangement.

B. Drilling of New Production wells

The Department of Rural Water Supply and Sanitation will undertake the development of production boreholes in areas where the existing water sources are congested and equip these with solar systems to create a point source water supply system. This is to be achieved through designed approaches that are specific to the existing settlement patterns i.e. concentrated settlements will be served based on the RGC criteria while the rural scattered communities will be served under the selected small scale solar powered system.

The criteria for the identification will primarily comprise the population brackets as shown below:

1	**Class A:** Population in range of 500 to 1,000 people	Proposed Drilling attempts
		At least 3 drilling attempts. A yield of 3.5m^3/hr from a maximum of two wells to be considered ideal
2	**Class B:** Population in the range of 1,000 to 1,500 people	At least 3 drilling attempts. A yield of 7 m^3/hr from a maximum of two wells to be considered ideal
3	**Class C:** Population in the range of 1,500 to 2,500 people	At least 4 drilling attempts. A minimum yield of > 10 m^3/hr from a maximum of two wells to be considered ideal
4	**Class D:** Vulnerable Farmer Groups in Drought Prone areas across the country	Developing large diameter well fields with yields greater than 15m^3/hr Provision for mobile pumping systems to be used as emergency water supply during the droughts.

Once the wells are successfully developed, they will be made ready for implementation including the other government agencies and Local governments.
Target areas will be identified using the existing safe water access data compiled by the Ministry from the water supply database. Parameters that will be used to determine the target areas will include:

i. The non-availability of parallel programs within the sub county targeting increase of coverage
ii. The absence of other potential water sources that may be used as a source of water supply to the sub county
iii. The regional balance. Irrespective of the computed access figures. Each of the target three regions will be served based on the computed average safe water access as per the existing data at the Ministry

2.4 *Component 4* : Sanitation and Hygiene for COVID19 response

The provision of safe water, sanitation, and hygiene services is essential to protecting human health during all infectious disease outbreaks, including the COVID-19 outbreak. The need for improved sanitation and hygiene services is greatly needed now as we battle COVID 19 especially in countries like Uganda where access to sustainable sanitation and hygiene services is still a challenge in institutions, households, communities and public places.

The simple act of hand washing with soap has been identified as a key action that must be carried out by everyone almost all time during the COVID 19 outbreak. In addition to hand washing other hygiene practices like frequent bathing, washing and disinfection of surfaces is recommended.

The Ministry of Water and Environment is proposing a number of interventions which are relevant to the fight against COVID but whose importance will last way beyond the outbreak and if properly undertaken, will enable the sustainable achievement of behavioral change for better hygienic practices in our communities.

These interventions will target mainly public places, households, water collection points, administrative offices, institutions like health care facilities, schools and prisons as well as service providers who must be protected during their course of action.
The Ministry of Water and Environment will use existing structures in the regions, districts and communities to undertake installation of public sanitation and hand washing facilities at public places in selected districts, water collection points, administration

premises and other institutions; Conduct media campaign to promote hand washing, safe water chain, and SOPs at water points including facilitation of water and sanitation committees to enforce social distancing and SOPs for 3 months in 4 regions across the country; Procurement of soap and disinfectants and point of use water treatment chlorine tables and PPEs for use at water points; Activate sanitation committees in urban areas, RGCs and Small towns and support enforcement of sanitation and hygiene activities; undertake water quality surveillance and monitoring; as well as coordination, documentation, and media monitoring for the period of intervention.

3. IMPLEMENTATION MECHANISM

The Ministry of Water and Environment (**MWE)** through the Directorate of Water Development (DWD) will be responsible for water development, regulation and overall management. The department of Rural Water Supply and Sanitation will be responsible for implementation of the infrastructure including establishment of Community based Management Systems.

The Ministry of Water and Environment shall be responsible for Planning and implementation functions that include but not limited to:

- Carryout assessment of water resources availability and economic analysis of water usage
- Design and construction of the water supply systems and infrastructure (the department currently has 2No. ongoing works contracts for the supply and installation of solar powered water supply systems. The department shall amend these contracts to allow for additional services to implement the works required for this emergency assignment.
- Undertake sanitation and hygiene promotion activities
- Support the Operation and maintenance of major water infrastructures and reservoirs
- Construction supervision through the departmental regional centres.

Beneficiary District Local Government shall be responsible for planning, site selection, project monitoring, setting up of appropriate management structures, availing land for the facilities and promotion of hygiene and sanitation activities. Assistance will be provided to scale-up activities to test and apply practical management activities and investment, along with administrative, regulatory and planning tools.

4. BUDGET REQUIREMENTS

A. Component 1

Table 2: Estimated costs for the upgrading of existing wells

	CASE I -				CASE II			CASE III		
Key Activity	**Unit**	**Qty**	**Rate ('000)**	**Amount ('000,000)**	**Qty**	**Rate ('000)**	**Amount ('000,000)**	**Qty**	**Rate ('000)**	**Amount ('000,000)**
Well Cleaning and Development	Hr	3	250	750	3	250	750	3	250	750
Test pumping 12 Hours	Hr	12	75	900	12	75	900	24	75	1,800
Water quality Analysis	No.	1	250	250	1	250	250	1	250	250
Submersible Solar Pump and accessories	No.	1	12,250	12,250	1	12,250	12,250	1	17,500	17,500
Solar PV Array and protection	KW	3	800	2,400	6	800	4,800	9	800	7,200
Reservoir stand and Erection	LS	1	8,000	8,000	1	13,500	13,500	1	16,000	16,000
Tank (Poly tank)	M^3	1	550	550	5	1,500	7,500	1	2,000	2,000
Pipes and Fittings	m	2000	2	3,000	4000	2	6,000	6000	2	9,000
Related Concrete Works	No.	8	300	2,400	16	300	4,800	16	300	4,800
Plumbing works	LS	1	850	850	1	1,700	1,700	1	3,400	3,400
Total for Installation		**1**		**31,350**	**1**		**52,450**	**1**		**62,700**
Total for all installations		**45**		**1,410,750**	**78**		**4,091,100**	**60**		**3,762,000**

	No.of BHs	Unit Investment Cost ('000) UGX	Total Investment Cost ('000) UGX
Class I	45	31,350	1,410,750
Class II	78	52,450	4,091,100
Class III	60	62,700	3,762,000
TOTAL UGX			9,263,850

	No.of BHs	Unit Investment Cost ('000) UGX	Total Investment Cost ('000) UGX
TOTAL (USD)			2,646.81

Table 3: Summary of cost estimates for Component 1

Activity Description	Qty	Unit Cost (USD)	Amount (USD)
Total supply and installation cost of 183 systems	1	2,646,810	2,646,810
Intensification works	183	1,400	256,200
Detailed design	LS	1,625,000	1,625,000
Environmental and social safeguards	LS	2,000,000	2,000,000
Community Sensitization, Mobilization and training	LS	120,000	125,000
Supervision and Monitoring	LS	1,500,000	1,500,000
GRAND TOTAL			**8,153,010**

B. Component 2

Table 4: Summary of cost estimate for Component 2

Activity Description	Qty	Unit Cost (USD)	Amount (USD)
Extension of distribution and intensification network for existing solar powered systems	40	15,000	600,000
Extension of distribution and intensification network for existing gravity flows schemes and piped systems	10	25,000	250,000
Community Sensitization, Mobilization and training	LS	75,000	75,000
Supervision and Monitoring	LS	500,000	500,000
GRAND TOTAL			**1,425,000**

C. Component 3

Table 4 presents the estimated and average unit requirements for the rehabilitation and complete overhaul of an existing borehole. This table has been used as the basis of the estimate for overall indicated project cost. The table also shows the anticipated key work items.

Table 5: Estimated unit costs for Rehabilitation of boreholes across the country

DESCRIPTION	ESTIMATED LUMPSUM (USD)
Bill No. 1	
Un installing existing materials	15
Fishing of parts that have fallen into the well	47
Borehole development (Average of 2 hours)	122
Down-the-Hole Geo-vision inspection	234
Bill No. 2	-
Test Pumping	135
Water Sampling and Analysis	95
Re-casting of concrete platform	459
Bill No. 3	-
Installation of Stainless Steel pipes and Rods to average depth of 33 meters	1,189
Pump Cylinder	68
Complete Pump head	114
Water Tank	1,420
Bill No. 4	-
Training and formation the user committees of beneficiary Communities	270
Sub Total	*2,384*
Support Supervision	*119*
Add 18% VAT	*451*
GRAND TOTAL	**6,938**

Table 6 presents the estimated and average unit requirements for the drilling and development of production boreholes. This table has been used as the basis of the estimate for overall indicated project cost. The table also shows the anticipated key work items.

Table 6: Unit costs for the developing of boreholes to decongest the already existing wells

DESCRIPTION	ESTIMATED LUMPSUM (USD)
Hydrogeological Investigations and Construction Supervision	2,027

Drilling and Development of Boreholes	9,459
Equipping of Boreholes	676
Support Supervision	608
Total	12,770

Table 7: Total funding requirement for Component 3

#	DESCRIPTION	AMOUNT (USD)
1	Well Cleaning, Development, Testing and concrete works	2,046,000
2	Supply and Installation of stainless steel materials	5,440,000
3	Drilling and Developing Production Wells	2,061,000
4	Support Supervision and M&E	500,000
	TOTAL	**10.047,000**

The Detailed Cost requirement is for carrying out rehabilitation for 23 boreholes per district.

D. Component 4

Table 8: Activities and their indicative budgets are shown in the table below:

No	Activity	Estimated Budget in UGX
1	Installation of sanitation and hand washing facilities at public places in selected districts, water collection points and administration premises and other institutions	13,500,000,000
2	Conduct media campaign to promote hand washing, safe water chain, and SOPs at water points including facilitation of water and sanitation committees to enforce social distancing and SOPs for 3 months in 4 regions across the country	1,500,000,000
3	Procurement of soap and disinfectants and point of use water treatment chlorine tables and PPEs for use at water points	1,000,000,000
4	Coordination, documentation and media monitoring for 3 months	1,000,000,000
5	Undertake water quality surveillance and monitoring	1,000,000,000
6	Activate sanitation committees in urban areas, RGCs and Small towns and support enforcement of sanitation and hygiene activities	500,000,000

	Total	**UGX 18,500,000,000** **USD 4,868,421.05**

Lot II: Emergency Response to COVID 19 in Water supply and Sanitation systems under Umbrella Authorities

PROJECT PROPOSAL SUMMARY REPORT

Project Summary		
1	**Sector**	Water and Environment
2	**Vote**	019 – Ministry of Water and Environment
3	**Vote Function**	09 02- Urban Water and Sanitation
4	**Vote Function Code**	1532 SCAP 100 – Umbrellas
5	**Project Title**	Emergency Response to COVID 19 in Water supply and Sanitation systems under Umbrella Authorities
6	**Project Duration**	6 months starting May 2020
7	**Estimated Project Cost**	USD20,055,676 **(**UGX 74.2 billion)
8	**Geographical location**	Throughout the country in small towns and Rural Growth Centres served by the Umbrella authorities
9	**Officer Responsible**	Eng. Dominic Kavutse; Commissioner Urban Water and Sewerage Services Department. Telephone: +256 414 505763 / +256 772 412853 (mobile) Email: dominic.kavutse@mwe.go.ug; kavutsed@gmail.com

EMERGENCY RESPONSE TO COVID 19 IN WATER SUPPLY AND SANITATION SYSTEMS UNDER UMBRELLA AUTHORITIES PROJECT

1.0 Background

The COVID-19 virus pandemic has not spared Uganda and her neighbouring countries; Kenya, South Sudan, Ethiopia, Rwanda, Tanzania and Democratic republic of Congo. Uganda has so far registered 33 cases all of which are Uganda citizens and foreigners that have recently returned to the county from abroad. There is a very big likelihood that this may increase although the Government has put up some measures such as closing all the boarders to minimize the spread of the virus.

The COVID-19 infection may cost significant financial and human resources. The proposed project will not only attempts to reduce such costs, but also bring significant savings in medium and long-term with a set of preventive actions protecting Ugandans and the Government Ministries from such unnecessary costs and losses.

The Ministry of Water and Environment (MWE) is committed to protecting the health and safety of the communities by providing safe, clean water and ensuring their sustainability without compromising the environment. With the deadly COVID-19 or any other major pandemic that may occur, the MWE as the lead agency for provision of safe and clean water, sanitation and healthy environment shall support all life- and socially important sectors in an effort to minimize the spread of the COVID-19. The Ministry will focus on its mandate to providing safe plus clean water, safe sanitation and safeguarding the environmental resources for social welfare and economic development to all residents of the country.

There is compelling evidence that improving water and sanitation facilities has beneficial impacts on the social economic status of communities especially in terms of improving outcomes in the areas of health, poverty reduction, living standard and education. As a matter of fact, hand washing (this implies having clean water and safe sanitation) and minimizing contact have remained the only sure way of controlling the spread of COVID 19 virus.

There are now at least 1,149[1] piped water supply systems serving small towns and rural growth centers (RGCs) that are managed or supported by the Umbrella Authorities providing safe and sustainable water services around the country. The Ministry through its six (6) Umbrella Authorities of water and sanitation has planned to increase the availability and access to safe and clean water supply for domestic, commercial and institution especially for hand washing targeting public places like hospitals/clinics,

[1] Source: Utility Performance Monitoring and Information System (UPMIS), September 2018

schools and markets during this pandemic and minimize losses during the future emergencies. The planned interventions are also aimed at providing clean and safe water to the refugee settlements and host communities which are located in the areas under the various Umbrella Authorities. The map below shows the extent of operations of the various umbrellas all over the country:

Figure 1: Map of Uganda showing the extent of operations of the various Regional Umbrellas of Water and Sanitation.

It has been noted that, hand washing and social distancing will be difficult to implement in a country where water shortages are routine. Limited availability of water in public hospitals makes it difficult for even health professionals to wash their hands making responding to COVID-19 even more challenging. Even in Greater Kampala area, only 46% of hospitals have adequate water supply and only 2% of them connected to wastewater services.

2.0 The Emergency Response to COVID 19 in Water Supply and Sanitation Systems under Umbrella Authorities Project

The Ministry of Water and Environment (MWE) **has formulated a project** proposal to be submitted to the World Bank for a grant funding. The main objective of this project is to minimize the spread of the deadly COVID-19 or any other major pandemic that may occur in future through ensuring adequate supply of clean and safe water in homes and public places which include, institutions, health centers, central markets, churches and refugee settlements to take aggressive and pro-active steps to address the COVID-19 threat and ensure the health and safety of Ugandan people. The project objectives are also focused to extend service coverage to unserved population (by serving all villages within or near the supply area), and to upgrade, expand and renew the existing infrastructure in order to ensure reliable water and sanitation service delivery to all residents.

The project is fully justified due to the fact that COVID-19 has already reached Uganda and neighboring countries: Kenya, Democratic Republic of Congo, Tanzania and Rwanda; and therefore, clean and safe water safe sanitation provision is critical. The Ministry therefore needs to put in place measures to avoid the spread of the COVID-19. The six Umbrellas are directly managing a total number of 498 water supply systems across the country and are as well offering operation and maintenance (O&M) support to 651 systems implying that umbrellas are charged with providing services to 1,149 systems across the country that already serve more than three million of Ugandans.

All health facilities are grappling with water bills a situation that will be worsened with the onset of the COVID 19 pandemic. There is, therefore, an urgent need for the emergency interventions in all the small towns and rural areas and protects the population in Uganda in terms of both connecting them to safe water and guarantee their use of safe water through the periods of emergencies such as COVID-19.

The following are the key activities that will be undertaken under the project in order of priorities:

1. Establishing list of the first responders to epidemic/virus outbreaks (hospitals, medical facilities, centers for quarantined people) to guarantee them stable water supply and safe sanitation.

2. Connecting those first responders with safe and sustainable water

3. Identification medium-term priorities for water supply and sanitation services in each of the district/operation areas of umbrellas.

4. Agreeing with Ministry of Health and Ministry of Education on the compensation to water providers for water, sanitation and hand washing services to their socially important objects, such as hospitals, medical centers and schools.

5. Identifying and developing new sustainable water sources, which include; production wells and springs, and replacement of old and leaking pipelines in case where the available sources are inadequate to serve the population.
6. Securing and installing hand washing and sanitary facilities to all public places with the extended supply areas.
7. Carrying out sanitation and hand washing campaigns in all the communities served by umbrellas.
8. Hydraulic assessments and piped water extensions to public institutions, refugee settlements and host communities as well as yard taps and household connections to minimize social contact.
9. Securing and installing alternative energy sources especially renewable energy to the identified new production wells, which are far from the national grid and making power line extensions to sources not very far from the national grid.
10. Securing and installing rain water harvesting tanks in very remote areas and areas with bad terrain that don't allow piped water extensions.
11. Securing and installation of reservoir tanks in areas where storage is not able to meet the current demand.
12. Securing of water treatment chemicals and materials to ensure thorough treatment of water supplied to all the communities.
13. Establishing of the system of financial relief from payments for water and sanitation services for customers affected by outbreaks of the diseases (perhaps through insurance or other financial instruments)

3.0 Coverage and Beneficiaries

The project will mainly cover all the 498 schemes that are directly managed by the Umbrellas and additionally 651 schemes those receive support from Umbrella Authorities. The total number of project beneficiaries is approximately 2.2 million people living in or near the service areas of the systems. By the end of the project, nearly 360,000 people will get connected to umbrella networks. The others will benefit from more reliable services of existing water schemes that would otherwise break-down, as well as from less queuing, and better water quality.

S/N	Umbrella of Water and Sanitation	Schemes under management of Umbrellas	Schemes under O&M support by umbrellas
1	Mid-west	62	42
2	North	85	160
3	South- West	130	300
4	Karamoja	37	11
5	East	58	96
6	Central	126	42
	Total	**498**	**651**

4.0 Results (Outputs and Outcomes)

On average, each scheme will be extended by at least 3km of pipeline network that will be extended to at least 30 new house/yard connections and 1institutional connections established in each of the schemes. This will make a total of 1500 km of pipe extensions and 15,000 new house/yard connections and 500 institutional connections.

The immediate impact of the project will be to connect all socially important education and health facilities to water and sanitation systems managed by umbrellas. This will also enhance the performance and reach of existing water and sanitation systems. The communities in the targeted towns are expected to benefit from safe health services, clean and health schools, and of affordable safe water. This will result in time savings related to health costs, water collection or accessing sanitary facilities, labour-saving devices in household, the switching away from more expensive water sources, property value rises in the TCs and RGCs, savings on account of less funds spent on treatment of water borne diseases, less expenditure on transport in seeking treatment, less time lost due to treatment seeking, value of avoided days lost at work or at school on account of sickness, value of avoided time loss of parent/ caretaker of sick children, and value of loss of death avoided, and overall increase in living standard. With regard to the health sector, there will be significant cost reduction on treatment of diarrheal disease, water borne and water washed diseases, and COVID 19 virus and alike spread will be cabbed. The project is also expected to provide or maintain in employment 3,300 persons (especially the youth) in social work, engineering, plumbing, commercial and accounting

5.0 Budget Estimates

The 6 months project requires USD **20,055,676 (**UGX 74,206,000,000) as detailed in the table below:

No	Intervention	Budget UGX	Budget USD
1	Critical extensions through Umbrella Authorities	61,198,000,000	16,540,000
2	System of financial relief from payments for water and sanitation services for customers affected by outbreaks (operational subsidy for Umbrella Authorities	12,108,000,000	3,272,432
3	Installation of hand washing facilities with soap	400,000,000	108,108
4	Print various IEC materials, media campaigns	250,000,000	67,568
5	Water quality surveillance and testing	250,000,000	67,568
	Total	**74,206,000,000**	**20,055,676**

6.0 Implementation arrangements

The project will be implemented using the exiting implementation arrangement under the project 1532 SCAP 100 – Umbrellas under the Ministry of water and Environment. Most of the procurements will be undertaken using the Ministry procurements structures while the actual execution of the works will be by the six Umbrella Authorities that are based in Moroto, Mbale, Wakiso, Kyenjojo, Kabale and Lira respectively. With this arrangement, the works will be undertaken with the urgency it requires.

Lot III: Water Resources Management

1.0 Protecting water sources through water quality testing and stakeholder's engagement and mobilization

The aim of this component is to ensure that the available water is of good quality and is well protected from pollution to improve the health of coronavirus victims. It will support realization of public health measures and ensure that people suffering from COVID-19 consume good quality. This component will involve testing of the quality of the various sources of water to ensure that the water is fit for consumption by the people. In addition, the component will involve mobilizing the communities and raising their awareness so that they consume adequate quantities of water and ensure that the sources of water are protected from pollution especially in view of increased rainfall that causes floods.

Water resources supports key socio-economic sectors and is key in of fight against the coronavirus. Safe water, sanitation and hygiene are crucial for human health and well-being. Often water, sanitation and hygiene services are provided separately from the health services but there is now a need for these activities to be considered an essential public health intervention. Poor quality water that is polluted poses a huge risk to the rapid spread of coronavirus and the death of coronavirus patients. The actions needed to fight the virus therefore must be holistic, incorporating interlinkages between sectors, particularly with water, food and agriculture, environment and public health, and taking into account co-benefits and trade-offs.

People living in densely populated areas such as urban areas, refugee, and internally displaced people camps, and prisons are very vulnerable as the water resources they depend on are often not well protected from pollution. In many of these places, people rely on community facilities, such as shared water points and communal toilets, and are dependent on private vendors and tanker trucks rather than water piped in from a water utility. The quality of these water sources is therefore very suspect and so the need to test the quality of the water and protect the sources from contamination becomes very important. The role of the people at the community, district and overall catchment level is very key to ensure that there is ownership and sustainability of the protection interventions and that the people actually consume adequate water to help them fight the virus.

The water quality problem and the need for protecting these water sources will become even more important with the increasing frequency of floods in the country with poor sanitation facilities (pit latries, septic tanks etc) that are susceptible to flooding resulting in pollution of water sources. This situation therefore calls for development of

mechanisms for promoting integrated planning and development of water, sanitation, and health systems so as to create synergy among various sectors and promote efficiency in utilization of available financial resources and create impact on the ground.

Water quality testing of various water sources will be done folowing the four Water Management Zones of Kyoga, Upper Nile, Albert and Victoria. These zones have laboratories at their regional office in Mbale, Lira, Fort Portal and Mbarara respectively. The sampling programs will be guided by the COVID-19 task teams and priority will be given to those areas where the infection levels or risks of infection are highest.
The results of water quality testing will be disseminated widely to the water and health teams and the COVID-19 task teams at district levels for use in decision making and will also be integrated in the mobilization and awareness raising programs at the catchment, sub catchment, micro catchment and community levels.

Catchment based planning, development and management of water and related resources is ongoing in the country. Each catchment has a Catchment Management Organisation (CMO) that is the level where stakeholder driven integrated water resources management and development is implemented. For each catchment, sub-catchment, micro catchment or watershed, stakeholder coordination structures have been created that include Catchment Stakeholders Fora (composed of representatives of all key stakeholders in the catchment), Catchment Management Committee (composed of a group of 10 – 25 high level officials representing key stakeholders (local governments, NGOs, Private sector etc.) in the catchment), Catchment Technical Committee (composed of technical staff from key stakeholders in the catchment (local governments, NGOs, private sector, technical staff of various government ministries and agencies). These existing sakeholder coordination structures will be used to mobilize the communities and raise their awareness so that they consume adequate quantities of water and ensure that the sources of water are protected in view of increased rainfall that is causing floods all over the country.

It is therefore proposed that the project will funds the following: (i) procurement of laboratory equipment, supplies and chemicals; (ii) holding of awareness raising and sensitization meetings by the Catchment Management Committees at various levels, (iii) production and dissemination of communication materials (including in digital form) and organization of catchment, sub catchment, micro catchment and local campaigns to raise awareness and sensitize communities about the need to protect water sources and ensure good quality water; and (iv) operating costs, including field allowances and fuel for water quality testing and stakeholder mobilization staff. The activities are expected to be carried out between April and July 2020.

2.0 Budget Estimates

The cost estimates for the 4 months activities are presented below

Items	Quantity	Unit rate	Total amount (Shs
Procurement of laboratory equipment, supplies and chemicals	4 laboratories	800,000,000	3,200,000,000
Awareness raising and sensitization meetings by the Catchment Management Committees at various levels	4 regions	200,000,000	800,000,000
Production and dissemination of communication materials	4 regions	100,000,000	400,000,000
Operating costs (allowances and fuel) for water quality testing and stakeholder mobilization staff	4 regions	200,000,000	800,000,000
Total			**UGX 5,200,000,000** **USD 1,368,421**