THE REPUBLIC OF UGANDA
MINISTRY OF WATER AND ENVIRONMENT
DIRECTORATE OF WATER RESOURCES MANAGEMENT

INTEGRATED WATER MANAGEMENT AND DEVELOPMENT PROJECT (IWMDP)

TERMS OF REFERENCE FOR LOT 3: CONSULTANCY SERVICES FOR TECHNICAL SUPERVISION OF IMPLEMENTATION OF CATCHMENT MANAGEMENT MEASURES IN KOCHI SUB-CATCHMENT

SEPTEMBER 2020

1 INTRODUCTION

Government of Uganda, with funding from the World Bank is implementing Integrated Water Management and Development Project which provides support to catchment management and restoration activities in sub-catchments of Lwakhakha (Mpologoma catchment), Lake Okolitorom and Apeduru Apapai (Awoja catchment), Kochi (Albert Nile catchment), and Aswa II (Aswa catchment). The project supports implementation of catchment management measures, including soil and water conservation, eco-system protection and restoration; livelihood improvement for the affected communities and supporting stakeholder engagement and the establishment of micro catchment structures for sustainable management of the interventions.

Implementation of the IWMDP is fully integrated within the government structure. Thus, Component 3 is implemented by the Directorate of Water Resources Management (DWRM) through its various departments and the relevant Water Management Zones (WMZs). The task teams are composed of staff from DWRM, WMZs, relevant MWE departments and agencies, and other government ministries and agencies. The services and works for implementation of project activities will be outsourced to consultants and contractors.

These Terms of Reference are for technical supervision of implementation of catchment management measures in Kochi sub-catchment in Albert Nile catchment in Uppernile Water Management Zone (UNWMZ).

The Ministry intends to procure consultancy services for technical supervision of the implementation of catchment management measures in Kochi sub-catchment. The selected consultant will carry out tasks associated with the execution of all obligations entrusted to him in accordance with the contract between the client and the consultant.

1.1 Kochi Sub Catchment Description

Kochi Sub Catchment is one of the 12 sub catchments that form the Albert Nile Catchment in Upper Nile WMZ. It covers Koboko, Yumbe and Moyo Districts in the north-western sub-region of Uganda. The sub-catchment covers an area of 1640 km^2, which is about 33% of the total area of the three districts. Kochi River head waters start in Koboko District, flow through Yumbe District and enter the Albert Nile in Moyo District.

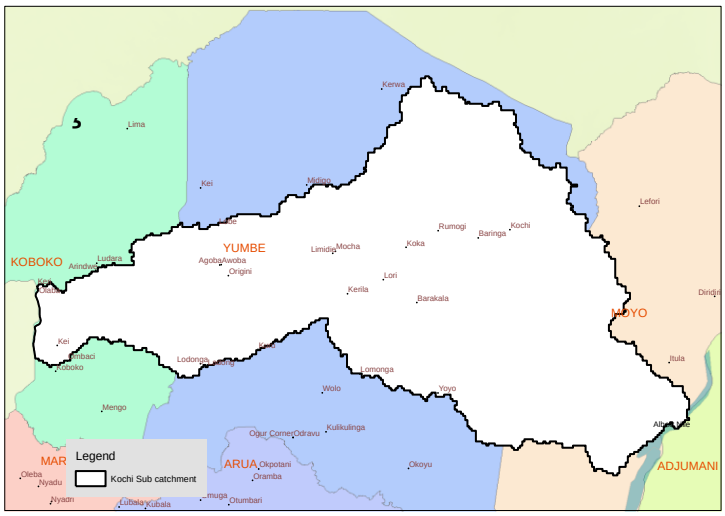

Figure 1-1: Extent of Kochi Sub catchment (Districts that lie wholly / partially in Kochi sub catchment)

1.1.1 Physical Environment

a) Climate

The sub-catchment receives a mean annual rainfall of about 1180 mm. The driest month is January while the greatest amount of precipitation occurs in August, with a difference of 178 mm between the driest and the wettest months.

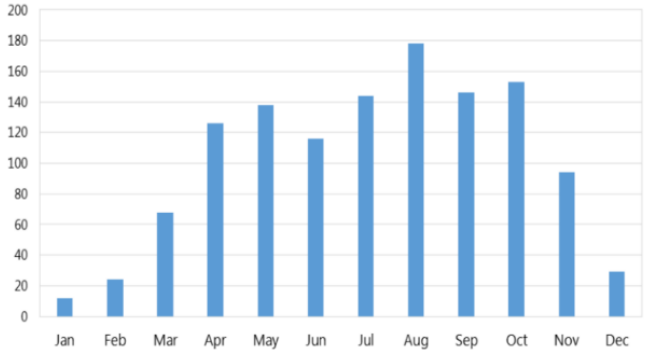

Figure 1-2: Mean monthly rainfall (mm) pattern for the Sub catchment.

Temperature analysis indicates highest values between January and March (31-33°C) and the lowest between July and August (27-29°C). This area experiences high rates of evapotranspiration, which has a resultant effect on runoff, groundwater recharge and dry season flows, increasing drought risks.

b) Topography and Drainage

The sub-catchment is generally flat, with mostly gentle undulating hills[1]. In Koboko District where River Kochi originates, topography is mainly flat rolling plains occurring at 960 to 1610 metres above sea level (asl) with isolated undulating hills mainly in the western and northern parts of the District towards the Sudan boarder, and a general slight slope towards the east[2]. The sub-catchment's highest point is 1272 masl on the border with Congo, while the catchment's lowest point is 620 masl.

River Kochi originates in the swamps in Alabanga Village, Degiba Parish, Midia Subcounty, Koboko District near the Uganda – DR Congo border. The river flows in the Southeastern direction being joined by a number of tributaries including River Ulira, River Udoze, River Dagala, River Ibanga, River Geringa, and River Kechi. It continues through the Waka and Umvosa Wetland Systems before finally discharging into the Albert Nile at Kochi Boma Village in Waka Parish, Itula Subcounty in Moyo district.

The upper part of the Kochi Sub-Catchment is located in communal land owned by the Elibu, Godia and Agibu Clans. The wetland system there has been greatly encroached upon and it is currently being used for agriculture with the main crops being rice, sorghum, banana and yams among others.

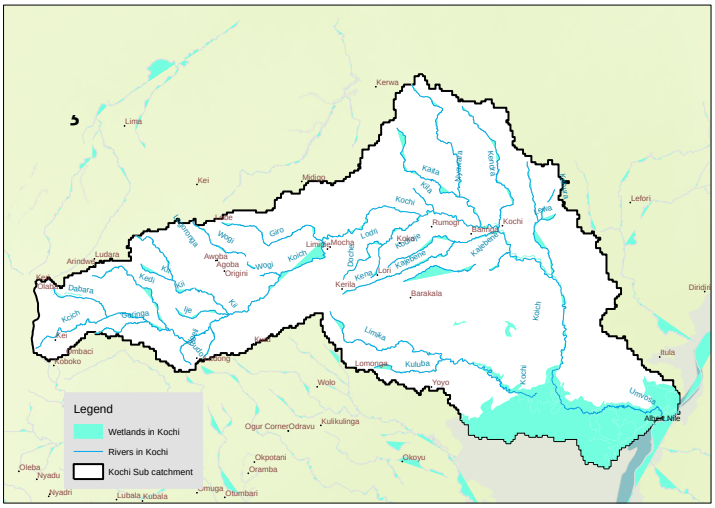

Figure 1-3: Rivers and Wetlands systems in Kochi sub catchment

In most of the middle parts of the Kochi Sub-Catchment (located mainly in the eastern parts of Koboko District and in Yumbe District), natural forests have been cleared for agricultural land and livestock grazing. Consequently, a large part of forests in the catchment are degraded, mainly because trees are cut down for charcoal burning and brick making as income generating activities.

In the lower parts of the sub-catchment, substantial natural resources still remain intact. The vegetation cover is composed of different species of acacia and borassus palm trees. Closer to the discharge location near the Albert Nile, the vegetation is characteristically made of wetland tree species such as *Lovoa trichiloides, Beilschmeidia ugandensis, Khaya angolensis, Phoenix reclinata, Calamus deeratus, Hallea stipulosa and Raphia fariniferagrass* and grass species such as *Glyceria maxima*, *Sagittaria*, *Typha* and *Phragmites spp.*

Most of the degradation in this part of the sub-catchment is attributable to the Morobi refugee settlements where vegetation has been cleared for agriculture and house construction. There is also a lot of soil erosion that has been triggered by poorly planned road infrastructure that has led to gully erosion. This has led to an increase in sediment load and intensity of flush floods. Coarse fractions have caused siltation of riverbeds. This in turn has increased the flooding intensity and hence riverbank erosion, which has further contributed to the siltation of river beds. Thus, it can be safely concluded that the flooding problems experienced in the low lands of Moyo District is due to the land degradation in Koboko and Yumbe where River Kochi and its tributaries originate.

c) Land Cover/ Land Use

In the upper reaches of the sub-catchment (Moyo District and the western part of Yumbe District), there is intense subsistence farming, often going to the very edge of rivers. In Yumbe, there is still some grassland in the eastern parts of the district, but there is more woodland vegetation in Moyo District.

[1] Yumbe District Local Government, 2011. Yumbe District Five Year Development Plan, 2010/11-2014/15
[2] Koboko District Local Government, 2011. Five-Year Development Plan, (2010/11-2014/15)

The principal form of land-use is small-scale subsistence farmland accounting for 66% of the total area of the District, and represents about 75% of the population engaged in farming activities. Grassland and woodland combined account for only 25% of the total area. Built-up area is limited and reflects the very low level of urbanization which is rated at only about 1.3% (compared to the regional average of urbanization is 5.4% and the national average is 11.3%). There are no gazetted wildlife reserves in the Districts apart from the gazetted forest reserves.

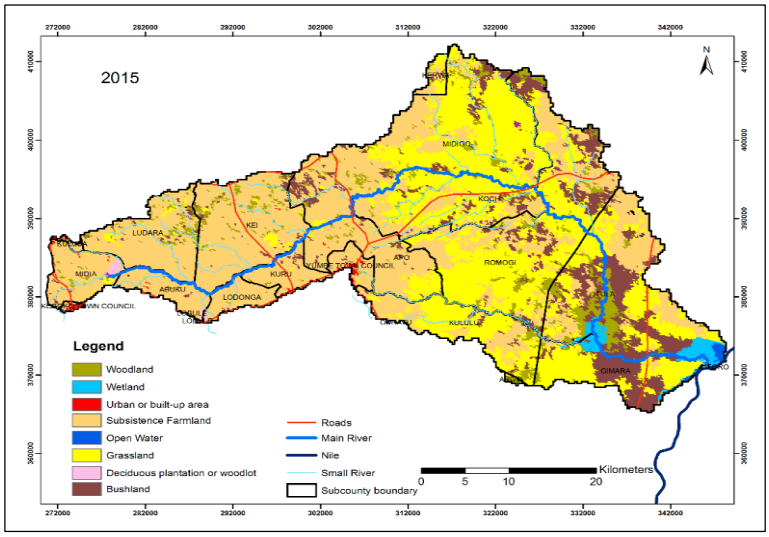

Figure 1-4: Land Use/ Land Cover Map of Kochi Sub-Catchment in 2015

1.2 Socio-Economic Environment

The total population of the districts that constitute the Kochi Sub-Catchment is 830,000 people distributed in 120,000 households. 51% of the people are females. 83% of the households are involved in subsistence farming, with nearly 90% involved in crop farming and 76% in livestock farming. Only 11% of the households have access to piped water, while 53% have access to boreholes.

While the sub catchment is characterized by moderate population pressure, the influx of Sudanese refugees that started in 2013 has increased the pressure. In addition, the growth rate of over 4.0 % in the sub-catchment has led to excessive land fragmentation, especially in the refugee settlements, which has pushed farming activities into marginal areas that are vulnerable to soil erosion and nutrient loss, and thus, increased encroachment of ecologically fragile areas such as wetlands, riverbanks and protected forests for farming purposes. The sub-catchment therefore experiences challenges of quantity and quality of the water resources as a result of poor land use practices, encroachment on riparian lands and wetlands, flash floods, and increased sediment loads in the water courses. Furthermore, poor disposal of human waste, especially in refugee settlements, has negatively impacted water quality.

Rain-fed agriculture is the most practiced land use with over 80% of the population depending on it. Profitability from cultivation in the sub-catchment is low, with high risks of exposure to flood and drought, and loss of yields. Grazing and pastoralism are practiced under the same conditions of agriculture, and they are therefore completely depending on rain water for water points and grassland availability.

1.3 Biological Environment

a) Vegetation

The Kochi sub catchment lies in an area described by Langdale-Brown *et al*. (1964) as dry *Butryospermum* parkland dominated by *Combretum molle, Combretum collinum, Terminalia glaucescens, Viteralia paradoxa* and *Acacia hockii* with tall grassesand *Cyperus papyrus* wetlands. These areas are dominated by the following grasses: *Hyparrhenia filipendula, Hyperthelia dissoluta* and *Brachiaria brizantha* among which the tree cover varies from 5% to 40%. The ground vegetation is dominated by *Brachiaria brizantha, Hyperthelia dissoluta, Chloris gayana, Sporobolus africana, Setaria sphacelata, Pennisetum polystachion, Cyperus distans* and *Brachiaria decumbens.* The characteristic wooded grassland communities consist of mainly *Lonchocarpus laxiflorus, Acacia hockii, Balanites aegyptiaca, Combretum collinum, Hymenocardia acida,* and *Piliostigma thonningii.* Other common species include *Combretum binderanum, Terminalia glauscecens, Hoslundia opposita, Maytenus senegalensis, Securidaca longipedunculata* and *Ximenia Americana and Vitellaria paradoxa.*

According to the IUCN Status, most of the species have been classified as Least Concern (LC) while a few have not been evaluated.

b) Large mammals

Due to its proximity to the Ajai Game Reserve, there is abundance of fauna in the Kochi sub catchment although as a result of increased human activity over the years like hunting, habitat destruction through cultivation, grazing and settlement, the species abundance has been negatively affected. The most common mammals in the area are as indicated in Table 1-1 below.

Table 1-1: Most Common Mammals in Kochi Sub-Catchment

English name	Scientific name	IUCN Status
Vervet Monkey	*Chlorocebus pygerythrus*	Least Concern
Olive Baboon	*Papio anubis*	Least Concern
Guereza (Black & White) Colobus	*Colobus guereza*	Least Concern
Aardvark (Ant Bear)	*Orycteropus afer*	Least Concern
Red River Hog	*Potamochoerus porcus*	Least Concern
Bushbuck	*Tragelaphus scriptus*	Least Concern
Common (Bush) Duiker	*Sylvicapra grimmia*	Least Concern
Oribi	*Ourebia ourebi*	Least Concern

c) Birds

According to previous studies, 58 species of birds have previously been recorded in the project area, comprising 32 species along major roads, 16 species in fallow areas, and 10 species along streams. Species with a preference for some level of forest cover dominated the records, and in addition, a few water birds were recorded. Five species of conservation concern (Brown Snake Eagle, White-headed Saw-wing, Grey-capped Warbler, Papyrus Gonolek, and Golden-backed Weaver) were recorded in the sub-catchment. Of these the Papyrus Gonolek (*Laniarius mufumbiri*) is categorized as near threatened according to IUCN 2013.

d) Reptiles

Kochi Sub-Catchment is located in an area which is generally hot with temperatures generally above 30oC during most times of the year. This favours the thriving of reptiles since reptiles generally depend on the surrounding environment for temperature regulation. The most common reptiles here are shown in Table 1-2 below.

Table 1-2: Most Common Reptiles in Kochi Sub-Catchment

Species	Common Name	IUCN Status
Agama agama	Orange-headed agama	Not evaluated-IUCN
Chamaeleo gracilis	Gracile chamaeleon	Least Concern (LC)
Crocodylus niloticus	Nile crocodile	Least Concern (LC)
Geochelone pqrdqlis	Leopard tortoise	Not evaluated-IUCN
Hemidactylus brooki	Brook's House gecko	Least Concern (LC)
Kinixys belliana	Bell's hinged tortoise	Not evaluated-IUCN
Leptotyphlops scutifrons	Peter's worm snake	Not evaluated-IUCN
Naja melanoleuca	Forest/water cobra	Not evaluated-IUCN
Python sebae	Rock python	Not evaluated-IUCN

e) Amphibians

Kochi Sub-Catchment has a large network of streams, rivers, wetlands and flood plains. Such an environment acts as a good habitat for amphibians since it favours their reproduction and all other activities including feeding. Some of the amphibians identified here are as indicated in Table 1-3 below.

Table 1-3: Common amphibians in Kochi sub-catchment

Species	Common Name	Conservation Status (IUCN)
Hemisus marmoratus	Marbled snout burrower	Least Concern (LC)
Hoplobatrachus occipitalis	Crowned bullfrog	Least Concern (LC)
Kassina senegalensis		Least Concern (LC)
Leptopelis bocagii		Least Concern (LC)
Phrynobatrachus natalensis	Natal dwarf puddle frog	Least Concern (LC)

1.4 Sub-catchment Management Issues

A number of issues were identified in the sub catchment through using the methods explained in chapter 3 of this report. The issues that concern water for environment, which is of critical importance in Kochi Sub-Catchment include:

i. Land and rangelands degradation
ii. Climate change impacts and pressures on pastoralist communities
iii. Low community awareness of effects of environmental degradation
iv. Encroachment of human activities on wetlands and riverbanks
v. Encroachment of human activities on forests and forest reserves
vi. Overexploitation of forests and deforestation
vii. Deforestation associated with refugee camps and IDPs to provide charcoal (to sell) and fuelwood
viii. Conflicts for land ownership and use of resources between Protected Areas and local communities

a) ***Climate Change and Variability***

The sub catchment population is becoming increasingly vulnerable to climate change, resulting in the variability in seasonal rainfall. This has significantly affected the different socio-economic activities that are heavily dependent on rainfall. There are reports of frequent occurrences of extreme weather events (floods and droughts, which are particularly severe in Moyo District) and increasing erratic rainfall. These pose a big challenge to the management of the sub-catchment's water resources.

b) Degradation of Wetlands, Riverbanks and Forests

Extensive wetland areas are situated along the left bank of the Albert Nile. A dense wetland network (formed by both permanent and seasonal wetlands) is present in the downstream part of the sub-catchment, mostly in Moyo District.

Encroachment of wetlands and river banks is prevalent in Koboko and Yumbe District, mainly for agriculture (mostly tobacco and vegetable growing), but also for other water polluting activities like car washing in rivers in Koboko District, and sand mining in Yumbe and Moyo Districts. Encroachment of wetlands and forests for fuelwood and cultivation, timber harvesting, illegal grazing in protected areas and refugee settlements is also on the increase.

In Kochi Sub-Catchment, forests constitute mostly of woodlands, which are situated mostly outside protected areas (the only protected area in Ozubu CFR which covers 700ha). In 1990, woodlands constituted nearly 44% of the total area of the three districts, but by 2005, this percentage had reduced to 24%.

The loss of tree cover leads to reduced water infiltration and percolation. Reduced water percolation increases the overland flow, and hence, high peak flows occur during the rainy season. This has a long-term impact on the ground water recharge and sub-surface flow which support stream flows during the dry season. Also, increased surface run-off increases the risk of soil erosion and transportation of sediments to the streams which affects raw water quality.

c) Refugees

By December 2017, Uganda was hosting about 1.4 million refugees. About 70% of these have settled mainly Yumbe, and Moyo, Adjumani, and Lamwo. These districts are among the poorest areas in the country and are in the early stages of recuperating from a protracted civil conflict.

Yumbe and Koboko Districts are accommodating refugees originating from the Democratic Republic of Congo, South Sudan and Somalia as a result of conflicts in those countries. Yumbe has the highest number of South Sudanese refugees, standing at over 223,000 in October 2018, Followed by Moyo District at 118,400 and Koboko District at 4913 (Office of the Prime Minister, UNHCR, Government of Uganda, 2018). Refugee settlements are concentrated along Kochi River. The hosting of large numbers of refugees results in increased pressure on the already vulnerable resources in the sub-catchment.

d) Inadequate surface water resources

The headwaters of Kochi River are located in Koboko District, near the border between Uganda and the Democratic Republic of Congo. In the dry season and during dry years, the river tends to run dry, especially in the upper reaches of the sub-catchment. Therefore, water use will require regulation, also because of the increase in population and the corresponding increase in crop and livestock farming.

Regulatory and management systems will be required to ensure downstream water delivery, environmental protection, and to avoid shortages. There is increased flooding during the wet season and droughts during the dry season, especially in the lower reaches of Rover Kochi

e) Limited Existing Water Resources infrastructure

Water resources infrastructure such as hand pumps or motorized borehole pumps are often used to access groundwater. As of 2010, at least 21 piped water supply systems existed in the sub-catchment, out of which 18 are gravity flow schemes, two are surface water schemes, and one is a ground water scheme.

Access to piped water is generally very poor in both the urban and rural areas in the sub-catchment districts, while it is above average for use of borehole water in Moyo and Yumbe Districts, and below average in Koboko District18 (Table 3).

f) Agriculture and Forestry

Agriculture is rain fed, and hence is vulnerable to erratic rainfall. The statutory buffer zone along rivers is almost never respected in Koboko and Yumbe Districts and agriculture activities take place on the river banks almost everywhere, considerably increasing deposition of eroded soil, and excessive sediment transport in water bodies which negatively affects the water quality. The use of fertilizers, pesticides, fungicides and insecticides particularly in tobacco and vegetable growing is also causing negative effects on the Kochi River, especially in Koboko District.

Encroachment of protected areas for cultivation purposes is reported in forest reserves in Koboko District, as well as wildlife reserves in Moyo District. Ozubu central forest reserve is the only protected area in Kochi Sub-Catchment, and is threatened by encroachment. Deforestation resulting from expansion of cultivated lands and charcoal production leads to reduced water infiltration and has a long-term impact on the groundwater recharge (i.e. worsening the problem of dried up boreholes and water scarcity in the sub-catchment). Increased surface runoff also increases soil erosion that determines loss of fertile land, and it worsens the effects of floods.

g) Soil Erosion

There is increased erosion in upland areas leading to increased sedimentation in lowland surface water sources. The high erosion risks are associated with riverbank degradation, brick making, uncontrolled livestock access, and cultivation of crops.

1.5 Scope of Implementation by Contractor to Be Supervised

The Non-consultancy shall include the following major activities:

1. Restoration of 268 km (134 km on each side) of the degraded stretches of the major rivers in Kochi sub-catchment through use of catchment management measures
2. Restoration of 110 ha of the degraded wetlands in Kochi sub-catchment through use of catchment management measures
3. Restoration of 500 ha of degraded communal and individual land through tree growing (afforestation, reforestation and agroforestry)
4. Promote and support establishment of soil and water conservation measures on 260 ha of individual farmers/public land to restore degraded hotspots and reduce/control runoff to control soil erosion and siltation
5. Integrate livelihood options in the management measures

2 OBJECTIVE OF THE CONSULTANCY

The overall objective of the Consultancy is to assist the Ministry of Water and Environment to ensure high standards of quality assurance in the implementation of catchment management measures in Kochi sub-catchment and completion of work within stipulated time and budget limits including knowledge transfer as much as possible.

3 NATURE OF ASSIGNMENT, SCOPE OF SERVICES, TASKS AND TIME OF DELIVERY

3.1 Nature of Assignment

The assignment covers activities related to technical supervision of the implementation of catchment management and restoration activities. The consultant will administer the implementation contract and ensure that the contractual clauses with respect to both quality and quantity of work are adhered to and the works are constructed in accordance with the provisions of the implementation contract.

The consultant will ensure coordinated and accurate communication of information to the beneficiary communities and local authorities especially on technical aspects.

The consultant shall provide suitable qualified and experienced staff for contract supervision duties during implementation works. Implementation supervision will involve duties and tasks associated with the execution of all obligations entrusted to the consultant in accordance with the contract between the client and the contractor.

There shall be an inception period of not exceeding 4 weeks during which the consultant shall mobilise staff, be introduced to project area, familiarize with the project documentation including the implementation contract and advise the client on any likely positive or negative aspects that may influence the contract implementation and remedies where applicable.

3.2 Scope of Services and Tasks

Implementation supervision will encompass all activities related to the project. Implementation supervision activities will cover three distinct phases:

i. Pre-implementation and mobilization phase and
ii. Implementation phase

3.2.1 Pre-Implementation and Mobilization Phase

During the pre-implementation and mobilisation phase, the consultant's task shall include, but not be limited to the following:

1. Review the contractor's work programme and method statements while highlighting areas that may pose a risk to timely and in-budget project completion.
2. Review contractor's deployment of staffing and equipment vis a vis those indicated in the bid.
3. Review and make recommendations to the contractor's procurement schedule.
4. Ensure that materials are checked at site to verify that they are of the required quality and specifications. If not, the materials should be rejected at site.
5. Establish sub-catchment and micro catchment structures and set up associated committees for coordinated planning and implementation of the Catchment Management measures in Kochi sub-catchment.
6. Undertake a baseline situational assessment of the degraded hotspots so as determine and measure forest, grassland, and wetland coverage and condition using standardized methodologies as a proxy for ecosystem service provisioning related to specific catchment management measures
7. Develop an effective, sustainable and interactive monitoring and evaluation (M&E) system for tracking catchment management measures against baseline indicators
8. Ensure that the contractor meets environmental, health and safety standards.

3.2.2 Implementation Phase

The consultant shall represent the client on site and supervise the entire implementation of catchment management measures. During the entire implementation process, the consultant shall work in close cooperation with MWE's project team and specifically the DWRM team in UNWMZ on assignment activities. The Consultant will be introduced to the DWRM teams in UNWMZ. During the implementation period, the consultant's tasks shall include, but not be limited to the following:

1. Approve/suggest modifications in the contractor's work programme, method statements, materials sources etc.
2. Supervise the contractor's work progress versus the planned project time schedule and ensure that delays are being kept to a minimum and, that the contractor at their cost takes measures to make up for time lost and pull the project back to planned schedule. In addition, the consultant is required to keep a monthly updated work program in liaison with contractor.
3. Timely issue to the contractor of all the necessary correspondences related to information, instructions, clarifications and suggestions so as to ensure consistency in quality, positive progress and planned costs.
4. Inspect, determine and approve the part of works before, during and after construction of part and, or whole of the works to ensure all time compliance with the specifications and standards.
5. Supervise the contractor's implementation activities, ensuring that all implementation is undertaken as designed, or in accordance with client-approved variations to the original design, and that all quality standards are met.
6. If necessary, approve any amendments to designs and/or specifications from the contractor in consultations with the client.
7. Inspect and certify all completed activities. Certify payment certificates for payments of completed activities or parts thereof. Ad-measure and certify all quantities invoiced by the contractor. Prepare the contractor's payment statement including final certificate in accordance with General Conditions of Contract and Conditions of Particular application.
8. Periodically review the status of the contractor's real versus required staffing, equipment, insurance and recommend appropriate actions to the client.
9. State all methods and procedures that are intended to ensure robust quality control, execute all procedures accordingly, and report on all quality control undertakings and their results to the client.
10. In addition to continuous implementation supervision, schedule and organize weekly formal visitation, inspections and meetings with the Contractor's representative and agree with the Contractor on progress made within the given period.
11. Hold monthly site meetings with the contractor and client to review progress of implementation of project activities.
12. Develop and maintain a project progress reporting format that is both, concise and in accordance with the client's and the World Bank's requirements.
13. Report monthly progress to the client, and immediately report any issues identified that could impact on the project completion schedule.
14. Review and recommend action on any claims presented by the contractor during the course of the contract and prepare variation orders, if required, for approval by the Client. In the case of any work or event for which the Contractor may claim additional time or payment, record the relevant facts before any question of principle/approval has to be decided by the Supervisor.
15. Guide the Contractor on compiling guidelines for community maintenance works and shall forward 3 copies of the guidelines to the Client as shall be provided for in the implementation Contract. In liaison with the client, make necessary preparations for post implementation management arrangements ahead of completion. Such shall include participation and guidance of stakeholders in identifying the best management strategy and all associated preparatory activities towards adoption of the preferred strategy.
16. Commission and approve completed measures and facilitate hand over to client.
17. Supervise production of final as built drawings produced by the contractor for the interventions.
18. Recommend final acceptance of the works to the Client upon satisfactory completion of the specified maintenance period.

3.2.3 Document Best Practices and Lessons Learnt

Support is need for documentation of all processes and share lessons learnt for probable scaling out catchment management measures. The consultant shall document of all project processes and share lessons learnt through;

i. Production of project brief, pull up banners, and posters
ii. Production of intervention-specific video documentaries
iii. Production of lessons learnt booklets for knowledge dissemination
iv. Organizing and holding radio talk shows to create awareness to public on the ongoing activities
v. Dissemination workshop on lessons learned and good practices documented for upscaling

3.3 Expected Time of Delivery

The estimated service delivery period is 24 calendar months tallying with the duration of the Implementation of the interventions by the contractor. The consultancy scheduling is as follows;

i. 3.0 months for Pre-implementation and mobilization phase: including 1 month for inception, and undertaking activities described in section 3.2.1
ii. 21 months for actual Implementation supervision (Implementation phase)
iii. Monthly progress reporting

It is the responsibility of the consultant to establish a detailed work program within the above time estimates. The estimated staff time inputs should be provided in accordance with the consultant's professional judgment and knowledge of the local conditions and needs.

4 ORGANIZATION OF THE ASSIGNMENT

4.1 Contractual Arrangements

A time- based contract shall be used for the consultancy services. The consultant shall show the costs of the proposed services accordingly.

4.2 Staffing Requirements and Staff Qualifications

4.2.1 Staffing Requirements

Within the technical proposal, the consultant shall elaborate on the envisaged logistical setup and deployment of appropriate skills for the execution of the assignment. The consultant shall present the staffing schedule in a manner that clearly shows the stage and duration where each of the proposed team members is planned to be involved in the project. An organogram reflecting the responsibilities of each staff member and line management setup of the proposed team shall be part of the proposal.

The Consultant is however expected to provide a team, composed of the following key staff.

i. 1No. Water/Environmental Management expert (Team Leader)
ii. 1No. Community Development Specialist
iii. 1No. Soil and Water Conservation Specialist
iv. 1No. Forestry/Tree Planting Specialist
v. 1No. Civil Engineer

In order to enhance the skills and experience, it is recommended that the consultant integrates local expertise into the project execution team. The consultant is free to propose additional skills as may be deemed necessary.

The above proposed staff bear different expertise and shall be expected on site for the duration of the specific interventions for which their expertise is required to ensure the works are done as per specifications and the logs are filled duly.

4.2.2 Staffing Qualifications

a) Key Experts

The key personnel shall have minimum academic qualifications and experience as stipulated below:

i *1No. Water/Environmental Management expert (team Leader):* A master's degree in Water or Environmental Engineering / Management / Science or related field with 8 years of general experience, 5 years of Specific experience in undertaking water related environmental assessments and in environment management planning. Experience in use of Geographical Information System tools will be an advantage.
   i. He/She will be the Consultants' representative (and should be empowered to take decisions on behalf of the Consultants) and will coordinate the Services. He will be available during the implementation of activities when key decisions are expected to be taken or issues to be resolved.
   ii. The Team leader should be competent in planning, designing, contractual management, resolving problems, quality maintenance, budgeting and financial control, progress monitoring, communication skills and documentation.

i. *1No. Community Development Expert:* The Social Development Specialist shall hold a degree in social sciences, social works & administration, development studies or community psychology.
   i. A minimum experience of 10 years, 5 of which should be in similar activities.
   ii. He/She must have demonstrated experience in community mobilization and management in relations to development projects of a similar nature.
   iii. The expert should have experience in undertaking impact, social and gender analysis.
   iv. He/She should be knowledgeable in preparing appropriate awareness programs.
   v. The specialist shall ensure communities are fully mobilized and sensitized during the project implementation process.

ii. *1No. Soil and Water Conservation Specialist:* The Soil and Water Conservation Expert should have a minimum Bachelor's degree in natural resources/water resources management, Agriculture, or related field.
   i. A minimum experience of 10 years, 5 of which should be in similar activities.
   ii. He/She must have demonstrated experience in preparation and implementation of soil and water conservation measures
   iii. He/She must have demonstrated experience in community involvement and training farmers in catchment restoration measures will be needed.

iii. *1No. Forestry/Tree Planting Specialist:* The Forestry Specialist will have a minimum of Bachelor's degree in Forestry, Forest Ecology or a closely related discipline.
   i. A minimum experience of 10 years, 5 of which should be in similar activities.
   ii. He/She must have demonstrated experience in preparation and implementation of catchment restoration measures
   iii. He/She must have experience in training farmers in tree planting and agroforestry at community level will be needed

iv. *1No. Civil Engineer:* The Engineer should have a basic degree in civil engineering
   i. A minimum 5 years of professional experience, 3 of which shall be in similar activities.
   ii. He/she should have significant experience in design and construction supervision of basic water-related engineering infrastructure such as open-flow drainage systems and check dams/ gully plugs.
   iii. He/She must have basic engineering survey experience (topographic survey, mapping, & map digitization).
   iv. He/She must have basic experience in undertaking geotechnical assessments

v. He/She must be computer literate and proficient in at least Excel and Auto Land Map (GIS capability) or other relevant survey application.

Key Staff must obtain a score of at least 75% upon Evaluation. Key Staff who obtain a score of less than 75% shall be replaced if the Consultancy firm progresses to negotiation stage.

a) Mandatory Non-key experts

CVs of Mandatory Non-Key staff must be submitted along with the Proposals and the staff meet the following minimum requirements.

GIS Expert: Must have a degree or postgraduate qualification in geographical information systems (GIS), geography or computer sciences with 5 years of relevant experience in building and maintaining GIS databases and using desktop GIS software to analyze the spatial and non-spatial data and information and create relevant thematic maps and graphs.

Mandatory non-Key staff who are established not to meet fully the minimum requirements shall be replaced if Consultant proceeds to contracting stage.

All the experts shall have some experience in water resources and environment related programs. The Community Development Specialist should possess extensive experience in stakeholder engagement in Uganda. All Projects illustrating the expert's specific experience for the project (water resources/environment projects) and their experience in East Africa have to be clearly defined in the expert's CV (including Project name, Location, Country, Duration, Project value, experts' specific tasks, etc.).

In addition, the core expert team could be supplemented by short-term experts in other areas required for targeted input. These short-term personnel are expected to have demonstrated and appropriate technical experience (in the range of 10-15 years). Short term personnel are also expected to provide on-job training and to lead and carry out seminars and other training activities in their areas of expertise.

4.2.3 Firm Qualification

The consultant/firm shall demonstrate their capability and experience in undertaking similar assignments of the similar nature and overall magnitude over the last 5 years.

5 REPORTING AND MEETING REQUIREMENTS

5.1 Schedule of Reporting and Submissions

The consultant is required to submit the following reports to the client in English. All reports should be submitted as required below.

No.	Reports/Deliverable	Description	Timing	No. of Copies
1.	Inception report	This report should include state of mobilization, findings from review of project documentation, proposals for improvement of project implementation and revised programme among others.	One month after commencement of the assignment	4 copies plus a soft copy
2.	Sub-catchment and micro catchment structure formation report	Report summarizing the processes followed and the composition of the structures and their operational arrangements.	2 months after commencement of the assignment	4 copies plus a soft copy

3.	Baseline situational assessment of the degraded hotspots Report	Report detailing the forest, grassland, and wetland coverage and condition using standardized methodologies as a proxy for ecosystem service provisioning related to specific catchment management measures.	3 months after commencement of the assignment	4 copies plus a soft copy
4.	An effective, sustainable and interactive monitoring and evaluation (M&E) system for tracking catchment management measures against baseline indicators.	An effective, sustainable and interactive monitoring and evaluation (M&E) system for tracking catchment management measures against baseline indicators.	Within 3 months after commencement of the assignment	N/A
5.	Monthly progress reports	Report summarizing physical and financial progress to date, compared to programme and budget among others. They shall be submitted	within 7 days of the end of the period covered.	4 copies plus a soft copy
6.	Project completion report	The substantial completion report shall state the project scope, principal activities by the consultant and the contractor (including deployment of resources during project implementation), the contractor's performance, all project relevant observations of the consultant, major issues that were encountered during project implementation and how these were solved, the project schedule citing all delays if any, and financial information.	24 months after commencement of the assignment	4 copies plus a soft copy
7.	Variation Orders and Claims reports	In case the Contractor submit claims for extension of time and/or increased costs, the Consultant shall submit valuation reports to the Client for each claim.	as soon as practically possible but not exceeding 7days after receipt by the Consultant.	4 Copies and soft copy (where possible)
8.	As built drawings.	Preparation of the As-built drawings for any infrastructure constructed e.g. gullies shall be largely the work of the Contractor, but the consultant shall be responsible for their final standard, accuracy and timely submission.	Within 30 days of provisional acceptance for the works contract.	4 copies plus a soft copy
9.	Guidelines for community maintenance works	The consultant shall ensure Guidelines for maintenance of the interventions by communities are prepared	Submitted to the client as soon as practically possible but not exceeding 7days after the establishment of the specific interventions.	4 copies plus a soft copy
10.	Documented Best Practices and Lessons Learnt	The reports and Video documentaries are intervention-specific and shall be prepared	Within 1 month after the completion of the	4 copies plus a soft copy

			implementation of a specific intervention.	
11.	Training of Clients staff (Preparation of training report for client's staff attached to the project)	The completion of training report shall state the training obligations of the consultant and the contractor, as agreed with the client, the type and duration of training activities undertaken, the number of participants in each training and their professional background, training outputs and achievements, as well as recommendations for further/continued training if any.	Since on job training goes on throughout the project period, the final training report will be required at the end of the project, however, intermediate reports will be required every six months in order to monitor how the trainings are being conducted and address any upcoming issues	4 copies plus a soft copy

All reports will be submitted to:

The Director, Directorate of Water Resources Management,
1st floor, Ministry of Water and Environment Headquarters
Plot 3-7, Kabalega Crescent, Luzira

For the attention of: Dr. Callist Tindimugaya
Commissioner, Water Resources Planning and Regulation Department
1st floor, Ministry of Water and Environment Headquarters
Plot 3-7, Kabalega Crescent, Luzira
Email: callist.tindimugaya@mwe.go.ug, callist_tindimugaya@yahoo.co.uk

5.2 Meeting Arrangements

Following the submission of the inception report, the consultant will make a presentation and attend monthly implementation progress review meetings with the client during the entire project period. The review shall be for the purposes of:

1. Engaging the Ministry of Water and Environment and obtain guidance on the technical aspects of the assignment.
2. Assessing progress.
3. Providing information and data relevant for the successful accomplishment of the entire assignment.

The nature of the meetings, locations (e.g. site, MWE offices and consultant's offices) and agenda shall be agreed upon between the consultant's and the client's project managers.

For ensuring organizational and stakeholder wide appreciation and ownership of the project outputs, the consultant shall be required to organise coordination meetings/workshops for presentation of key reports after each project milestone to a representative group of stakeholders that is to be agreed upon with the client. In addition, the consultant's representative shall be available whenever stakeholder visits to the project sites are arranged. The Consultant will therefore be required to include a provisional sum of 30,000 USD to meet costs of holding the workshops and meetings. The Client will pay the Consultant based on actual and approved expenditure of the Consultant's budget (for workshops and meetings) which will have been discussed and agreed to prior to commencement of the Consultancy. The basis for payment of participants by the Consultant will be full participation for the entire duration of the workshop together with an authentic invitation letter of the participant.

6 SERVICES AND FACILITIES TO BE PROVIDED BY CLIENT

The client will provide free of charge all existing information, data, reports and maps in the custody of the client. This will include the:

i. Albert Nile Catchment Management Plan.
ii. Sub catchment Hotspot Identification and Mapping Report
iii. Water Resources Development and Management Strategy for the Upper Nile WMZ
iv. Contract for the implementing Contractor
v. Approved Environmental and Social Project Brief for the proposed Implementation of Priority Catchment Management Measures in Kochi Sub-Catchment
vi. Relevant GIS maps

7 CAPACITY BUILDING AND SKILLS TRANSFER

For purposes of capacity building and skills transfer in supervision services and skills transfer and ensuring adequate direct involvement of the client in delivering the project, the client will assign 2 counterpart staff. The consultant shall as part of his financial proposal include the cost for involving the 2 staff in attending site meetings, review of as-built drawings, preparation and review of progress reports. The costing shall be in Consultancy firm's costs of providing the training. MWE shall provide the costs for the allowances and transportation costs including fuel for its Staff.

The proposal shall include the proposed methodology for the knowledge transfer throughout the assignment, the proposed training obligations of the consultant and the contractor, the type and duration of training activities to be undertaken, the optimum number of participants in each training, methodology for monitoring and evaluation of trainees, and any post training support and resources.