Water Resources Authority

Ewaso Ngiro North Basin Area

MANAGEMENT GUIDELINES FOR GAZETTEMENT OF MARURA (EWASO NAROK) SWAMP

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Draft Version

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To all we say thank you.

Basin Area Coordinator

Ewaso Ngiro North Basin Area - Nanyuki

Acronyms

AEZ	-	Agro-Ecological Zone
CMS	-	Catchment Management Strategy
ENNBA	-	Ewaso Ngiro North Basin Area
KFS	-	Kenya Forest Service
ENWRUA	-	Ewaso Narok Water Resources Users Association
m.a.s.l	-	Meters Above Sea Level
NGAO	-	National Government Administration Officers
NLC	-	National Land Commission
NEMA	-	National Environment Management Authority
RGS	-	Regular Gauging Station
WDC	-	WRUA Development Cycle
WRM	-	Water Resources Management
WRA	-	Water Resources Authority
WRUA	-	Water Resources Users Association

Table of Contents

1 Introduction and Background Information

1.1 Introduction

A catchment area is defined as the land from which water naturally flows into a water course. The environmental status and conditions of a catchment determines the reliability, quantity and quality of its water yields. A catchment area acts like a water storage facility where during the rains, the vegetation cover allows the water ample time to percolate deep down and move as a sub-surface flow to recharge the rivers, springs and ground water storage in both shallow and deep aquifers. This sub-surface flow is slow resulting in rivers from a well-maintained catchment having higher base flows even during the dry season as well as good water yield from boreholes in the vicinity. In poorly maintained and degraded catchment, the rainfall results in the rapid surface run-off which is channelled into the river courses, resulting in flash-floods and high volumes of suspended solids. Since there is little storage in such a catchment, the rivers originating from such catchment will not be able to sustain their base flows during the dry season.

Catchment areas are thus a vital component in water resource management and they should be formally delineated, gazetted, protected from encroachment and pollution and managed sustainably to maintain their ecological integrity.

1.1.1 Legal Framework for Catchment Protection:

Because of its nature, environmental management and protection in general and catchment protection and management in particular falls within the mandate of many institutions. Catchment protection is therefore, a cross-cutting issue which is spread over several legal framework, which have a bearing on the environment and/or natural resources management. These include:

i). ***Constitution of Kenya.***

Article 66 deals with land and provides that the State may regulate the use of any land, or any interest in or right over any land, in the public interest.

Article 69 deals with the environment and natural resources including the sustainable exploitation, utilisation, management and conservation and the

equitable sharing of the accruing benefits. Article 69 (2) states that it is the duty of every person to cooperate with State organs and other persons to protect and conserve the environment and ensure ecologically sustainable development and use of natural resources.

The Article 70 deals with the enforcement of environmental rights by any person.

ii). ***Water Act 2016***

Section 22 provides that where the Authority is satisfied that special measures are necessary to protect catchment area or part thereof, it may, with the approval of the Minister, by order published in the Gazette declare such an area to be a protected area.

The Authority may impose such requirements, and regulate or prohibit such conduct or activities, in or in relation to a protected area that the Authority may think necessary to impose, regulate or prohibit for the protection of the area and its water resources.

Under Sections 23 of the Act, the Authority may identify a catchment area, part of a catchment area or water resource to be identified as areas to be Protected or designated as Groundwater Conservation Areas if the Authority is satisfied that doing so is necessary for the protection of the water resource and its multiple uses. The Authority shall, in conjunction with relevant institutions and stakeholders, establish management rules or plans that shall apply to each Protected Area or Groundwater Conservation Area.

iii). ***Water Resources Management Rules 2007***

Part IX section 116 - 120 provides for the determination of the riparian land, which as defined in Part I of these rules does not imply a change of ownership but imposes management controls on land use for water resource quality as defined in these rules.

This part deals extensively with the management of the riparian land including its management, activities that are allowed or proscribed within the riparian land.

The Authority shall undertake Public Consultation with respect to the establishment of areas to be Protected or designated as Groundwater Conservation Areas and the management rules or plans that shall apply with respect to these Areas.

iv). ***Relevant Sustainable Development Goals (SDGs)***

Target 6b. Support and strengthen the participation of local communities in improving water and sanitation management

Target 6.3 - By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

Target 6.6: By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes

1.1.2 Background information on *Marura Swamp*:

The Ewaso Narok (Marura) Swamp (here after referred to as the "swamp") is located within Maundu Ni Meri and Sosian sub locations of Sosian location and Thome sub location of Mutara location within Laikipia County. The land under question measuring approximately 24 km2 (2,400 hectares), at the confluence of Ewaso Narok, Pesi and Aiyim rivers

The area lies within Ewaso Narok 5AA sub basin and Pesi 5AC sub basin and is part of the Ewaso Narok river system. The land under question is in the form of a basin-like depression with an outlet to the north-east into Ewaso Narok River. The swamp is normally covered with vegetation, mainly the Marura plant, from which it derives its name.

1.1.3 Rationale for Catchment Protection through Gazettement;

Ewaso Narok (Marura) swamp is threatened by human activity that includes livestock grazing, crops growing, fish rearing and deforestation that has caused drying up of the water source. The intention of the gazettement is to improve management of the wetland in a sustainable manner to enable all communities including those downstream to enjoy the benefits of the swamp. The swamp constitutes one of the main sources of water for Ewaso Narok River. Initially, the area had been set aside for public use as a water catchment but was later encroached on. Numerous stakeholders, both public and private and communities have severally complained of the ongoing destruction resulting in diminishing water flows and environmental degradation. Attempts to address the complaints have been made by several institutions without success. To ensure proper conservation and protection of the swamp, WRA, community and other key stakeholders recognised the need for Gazettement of the land. In this regard, a stakeholders' meeting was convened on 18/11/2021 to build consensus on the way forward. The stakeholders and community has expressed their willingness and intentions to have the swamp protected and conserved a top priority in order to assure the riparian community and other stakeholders of adequate and sustainable water resource availability.

ENNBA's CMS (2014 - 2022) has recognised the need to protect swamps and increase their environmental functions. This will be achieved through the implementation of the following strategies:

- Sensitization of the local community on the need to protect the swamp to ensure environmental sustainability;
- Development of an action plan to protect the catchment and their rehabilitation;
- Participatory mapping of the protection zones around the wetlands with the community;
- Apply the law to protect wetland (enforcement for wetlands/riparian/springs protection);

In addition, Part XI of WRM Rules section 123 - 125 sets out the process and procedure for the identification of an area as a protected or groundwater conservation area. This is the procedure used in coming up with this Gazettement document for the Marura Swamp.

1.2 Location and size of area to be gazetted

The area identified for Gazettement is commonly known as Ewaso Narok (Marura) swamp and is partly located in Thome sub location of Mutara location, Maundu Ni Meri and Sosian sub locations of Sosian location all within Rumuruti Division of Laikipia West Sub County, Laikipia County. The swamp is formed at the confluence of Ewaso Narok, Pesi and Aiyim rivers and is partly within the 5AA and 5AC sub basin of Ewaso Ngiro North Basin Area (Rumuruti Sub Basin Area Office). The land area to be protected is approximately 24 km2 (2,400 Hectares). The boundaries of the wetland will be demarcated and beacons placed in line with the pegging carried out by Water Resources Authority.

1.2.1 Watershed area;

The area that contributes surface run-off into the wetlands has been delineated through the use of Arc SWAT software. The drainage area upstream of the swamp measures 1,717.7 square kilometres and which contributes surface water flows into the swamp. Figure 1 shows the area of the swamp and the upstream catchment area that contributes flows into the swamp:

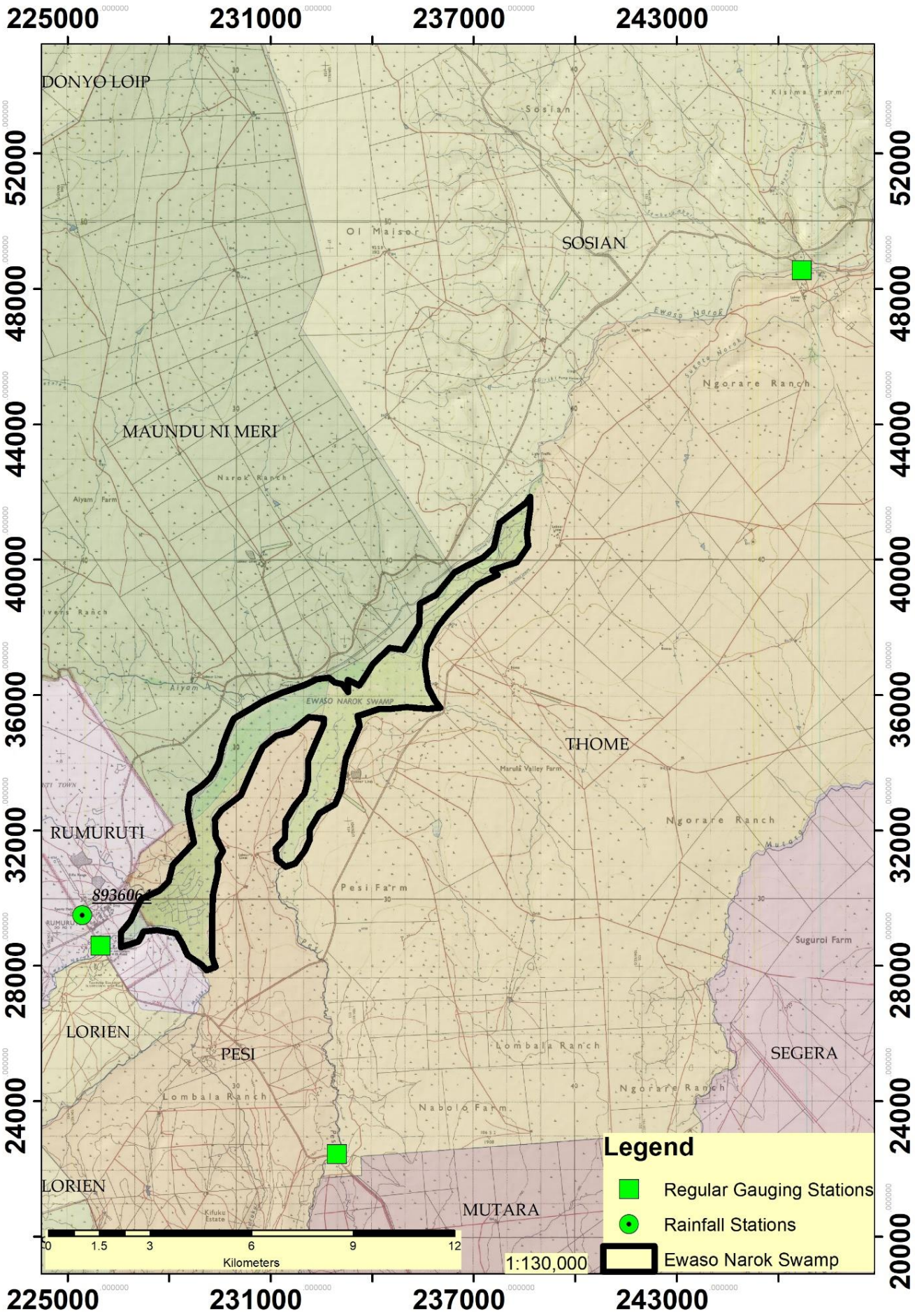

Fig.1. Location of Marura (Ewaso Narok) Swamp catchment within Ewaso Narok river catchment

1.2.2 Physiography, climate and rainfall;

a) Physiography

The Ewaso Narok river catchment area elevation ranges from a low of 1791 m.a.s.l at the swamp and rises to a high of 2893 m.a.s.l to the south west of the catchment around the Aberdare's (source of Ewaso Narok and Pesi rivers) and with a mean elevation of 2056 m.a.s.l. The catchment is leaf shaped and extends upstream in north south direction with a length of 75 kilometres (see the map above) and a width of 35 kilometres at its widest.

The slope ranges between 1.2% to 8% with the steeper slopes found on the upstream part of the catchment. The catchment drains in a northerly direction, where the rivers form the Ewaso Narok river that confluences with Ewaso Ngiro river further to the north to form the main Ewaso Ngiro North River.

b) Climate

The climate around Rumuruti area is classified as Cfb under the Köppen and Geiger climate classification system. The average annual temperature in Rumuruti is 18.3 °C, with March being the hottest month of the year at an average temperature of 19.6 °C and August being the coldest month of the year with an average temperature of 17.1 °C.

Table.1. Mean monthly temperature and sunshine hours at Rumuruti

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean	18.4	19.2	19.6	19.2	18.8	18	17.2	17.1	18	18.4	17.5	17.7
Min	12	12.3	13	13.9	13.7	12.9	12.3	12.2	12.1	13	13.3	12.6
Max	24.7	26	26.1	25.1	24.4	23.5	22.4	22.4	23.8	24	22.6	23.3
Sun hours (Hrs)	10.1	10.5	10.1	9.4	9.6	9.2	8.3	8.4	9.7	9.3	7.9	8.8

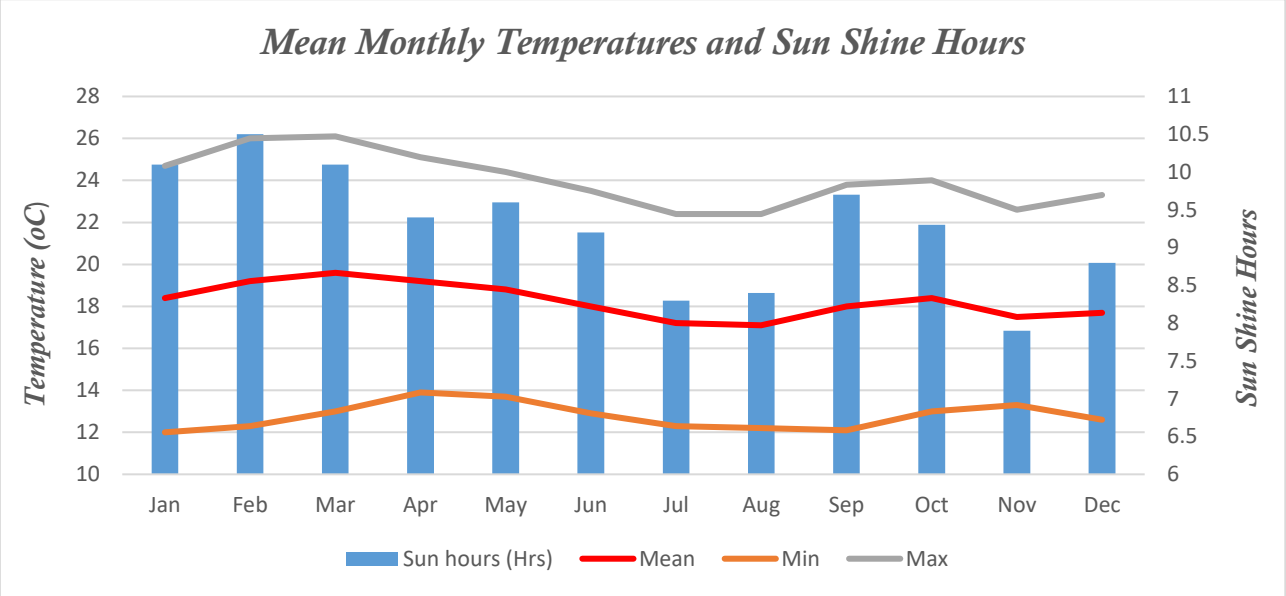

Fig.2. Mean monthly temperature and sunshine hours at Rumuruti

The Ewaso Narok sub catchment lies within the agro-ecological zones (AEZ) IV UM which is mainly dry with grassland and shrubs and suitable for livestock rearing. In general, the area is characterized by moderate rainfall with annual rainfall of 708 mm (Rumuruti Ministry of Works No. 8936064). April to June and October to December are wet or rainy seasons with maximas occurring in April and November respectively and with continental rains which are low occurring in between the two maximas. The table and figure below represent the mean monthly rainfall at Rumuruti Ministry of Works Rainfall station:

Table.2. Mean Monthly Rainfall and Humidity at Rumuruti

Month	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*	*Total*
Rainfall (mm)	27.4	30.8	49	108.6	66.9	54.5	87.9	86.3	43.9	48.6	73.2	30.9	708
Humidity	57%	52%	55%	64%	64%	65%	69%	70%	61%	62%	73%	67%	63%

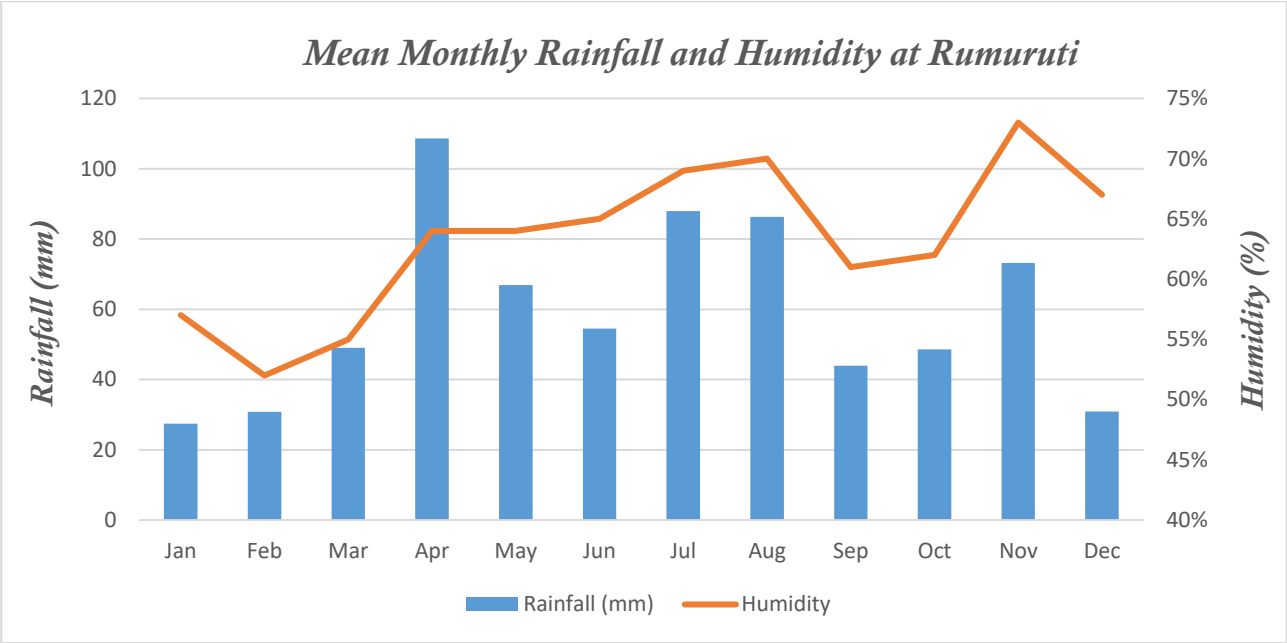

Fig.3. Mean Monthly Rainfall and Humidity at Rumuruti

c) Vegetation;

The same area is currently characterized by land transformation into small-scale cultivation drawing water from the swamp. The number of farmers practicing crop farming has been increasing over the years posing a threat to the survival of the swamp

d) Current land use and its adverse impacts,

The Ewaso Narok swamp sub catchment is within Laikipia County in a rural setting, where the main socio-economic activity is agriculture, basically subsistence farming for the growing of vegetables for the local and national market. Due to the availability of water in an otherwise dry area with unreliable rains, irrigated agriculture has attracted many people. The expected economic gain has resulted in pressure on the swamp with the rising demand for land leading to encroachment on the swamp. This is also resulting in unsustainable water resources abstractions especially during the dry season.

Mushrooming of these farming and water abstraction activities will impact negatively on the ecosystem health of the wetland which will eventually result into its death and subsequent loss of ecosystem services.

2 Current Situation Analysis

2.1 The vulnerability of the water resource

Ewaso Narok River has a Regular Gauging Station 5AC15 located at coordinates E036.800000, S01.272778 (37M 0255194.5, 9859215) at an elevation of 1705 m.a.s.l near Rumuruti town and approximately 1 km upstream of the swamp. The station has daily discharge data starting from 1982 to the current. On the other hand, Pesi river has a Regular Gauging Station 5AB02 located at coordinates 37N 0232941, 0022450 (E036.600696, N00.202931) at an elevation of 1868 m.a.s.l approximately 9.5 kilometres upstream of the swamp. The station has daily discharge data from 1959 to date.

The encroachment on the Ewaso Narok swamp riparian and catchment land through cultivation, livestock grazing, harvesting of indigenous plants and the planting of exotic tree species has resulted into reduced recharge into the ground, lowering of the water table and a decrease in the discharge of the Ewaso Narok River downstream of the swamp.

In order to have a clear understanding of the water resources availability in the Ewaso Narok swamp catchment, the available data for 5AB04 and 5AC15 stations has been used.

According to the flow duration analysis for Pesi and Ewaso Narok rivers, the following scenario on surface water availability emerges:

Table.3. Surface water availability for Pesi river (RGS5AB02)

		Allocation	Allocated	Balance
Q95	Reserve	15,206	0	15,206
Q80	Normal Flow	7,517		7,517
Q50	Flood Flow	20,218		20,218

Mean	6.265
Standard deviation	14.215

Probability of non-exceedance	Probability of exceedance	Flow	Flow	Available for allocation	Days	Total volume	Volume per year
%	%	m^3/s	m^3/day	m^3/s	nos	Million m^3	Million m^3
99%	1%	7.731	667,916		3.65	2.44	133.3
95%	5%	2.792	241,229		18.25	4.40	130.9
90%	10%	1.730	149,472		36.50	5.46	126.5

85%	15%	1.255	108,449		54.75	5.94	121.0
80%	20%	1.028	88,836		73.00	6.49	115.1
75%	25%	0.869	75,082		91.25	6.85	108.6
70%	30%	0.756	65,318		109.50	7.15	101.7
65%	35%	0.678	58,579		127.75	7.48	94.6
60%	40%	0.606	52,358		146.00	7.64	87.1
55%	45%	0.552	47,693		164.25	7.83	79.5
50%	**50%**	**0.497**	**42,941**	**20,218**	**182.50**	**7.84**	**71.6**
45%	55%	0.435	37,593		200.75	7.55	63.8
40%	60%	0.385	33,264		219.00	7.28	56.2
35%	65%	0.352	30,413		237.25	7.22	49.0
30%	70%	0.314	27,130		255.50	6.93	41.7
25%	75%	0.291	25,142		273.75	6.88	34.8
20%	**80%**	**0.263**	**22,723**	**7,517**	**292.00**	**6.64**	**27.9**
15%	85%	0.236	20,390		310.25	6.33	21.3
10%	90%	0.213	18,395		328.50	6.04	15.0
5%	**95%**	**0.176**	**15,206**	**0.000**	**346.75**	**5.27**	**8.9**
1%	99%	0.117	10,109		361.35	3.65	3.7

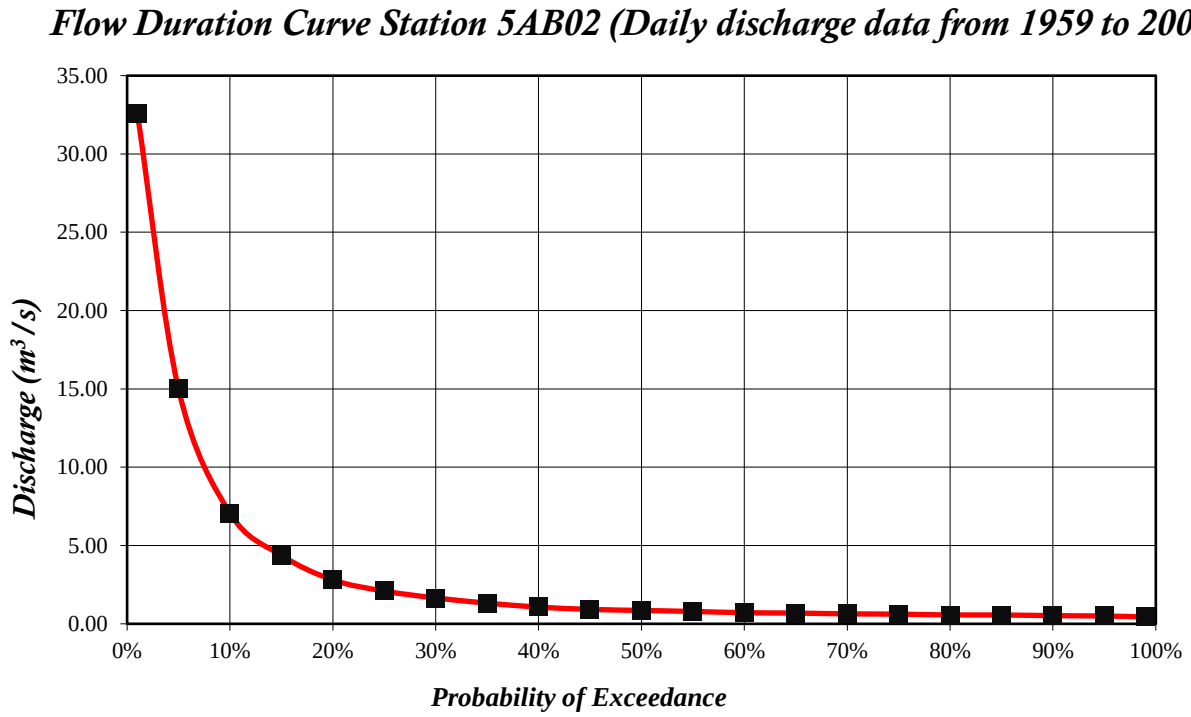

Fig.4. Surface water availability for Pesi river (RGS5AB02)

Table.4. Surface water availability for Ewaso Narok river (RGS5AC15)

		Allocation	Allocated	Balance
Q95	Reserve	43,114	0	43,114
Q80	Normal Flow	5,702		5,702
Q50	Flood Flow	25,056		25,056

Mean	6.265
Standard deviation	14.215

Probability of non-exceedance	Probability of exceedance	Flow	Flow	Available for allocation	Days	Total volume	Volume per year
%	%	m^3/s	m^3/day	m^3/s	nos	Million m^3	Million m^3
99%	1%	32.606	2,817,117		3.65	10.28	324.0
95%	5%	14.989	1,295,015		18.25	23.63	313.7
90%	10%	7.067	610,606		36.50	22.29	290.1
85%	15%	4.371	377,654		54.75	20.68	267.8
80%	20%	2.802	242,093		73.00	17.67	247.1
75%	25%	2.091	180,662		91.25	16.49	229.4
70%	30%	1.651	142,646		109.50	15.62	213.0
65%	35%	1.324	114,394		127.75	14.61	197.3
60%	40%	1.068	92,275		146.00	13.47	182.7
55%	45%	0.921	79,574		164.25	13.07	169.3
50%	**50%**	**0.855**	**73,872**	**25,056**	**182.50**	**13.48**	**156.2**
45%	55%	0.791	68,342		200.75	13.72	142.7
40%	60%	0.711	61,430		219.00	13.45	129.0
35%	65%	0.686	59,270		237.25	14.06	115.5
30%	70%	0.636	54,950		255.50	14.04	101.5
25%	75%	0.618	53,395		273.75	14.62	87.4
20%	**80%**	**0.565**	**48,816**	**5,702**	**292.00**	**14.25**	**72.8**
15%	85%	0.565	48,816		310.25	15.15	58.6
10%	90%	0.521	45,014		328.50	14.79	43.4
5%	**95%**	**0.499**	**43,114**	**0.000**	**346.75**	**14.95**	**28.6**
1%	99%	0.438	37,843		361.35	13.67	13.7

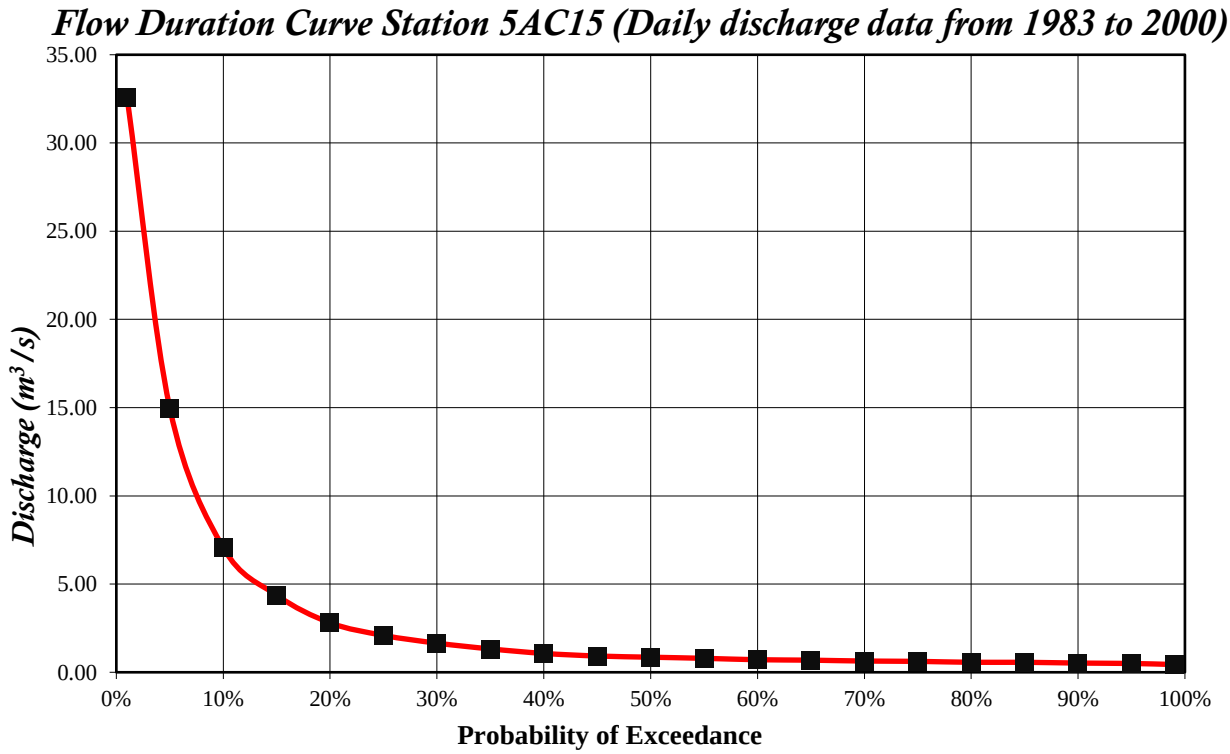

Fig.5. Surface water availability for Ewaso Narok river (RGS5AC15)

2.2 The water resource quality objectives and the current status of the water resource

Section 20 of the Water Act, 2016 requires the Authority to prescribe the criteria for classifying water resources for the purposes of determining water resources quality objectives for each class of water resource.

The Resource Quality Objectives represent the desired status of the resource, covering all aspects of quantity, quality, timing and aquatic biota. The RQOs are different for different classes of water resource. The objectives generally relate to the extent to which the water body is allowed to be adversely impacted by water use with respect to its natural state. Conceptually the RQOs provide a "target" condition of the resources. Management decisions should be made such that the condition of the resource is progressively trending towards the RQO. The status of the resource is a measure of how far the condition of the resource is from the RQO. Initially, RQOs shall be determined at the nodes where the Reserve flows are being determined, in this case at RGS 5AB04 and 5AC15.

According to the ENNBA CMS (2014 - 2022) Ewaso Narok Management Unit is classified as of high Ecological importance. These are areas with almost natural ecological characteristics. The focus for water resources management is the protection of the natural ecological characteristics for ecological, recreational and development of tourism with economic importance. Key water resources issues include:

- Water scarcity.
- Catchment degradation.
- Erosion.
- Encroachment of water bodies and Land tenure around the lake.
- Human activities in Ewaso Narok swamp affect the role of swamp.
- Social conflicts due to over abstraction.

Sustainable regional water resources management of these units would require cooperation collaboration and synergy with the Kenya Forest Service, the Kenya Wildlife Service, Counties, user communities.

2.3 The class of the water resource

The Ewaso Narok sub-catchment can be classified as "Alert" as the available water is at times not of adequate quantity and quality to meet the demand. The water availability is relatively good in terms of quantity and quality in the upper parts of the river but deteriorates as the river flows downstream due to pollution.

2.4 Land uses and their potential impact on the water resources

2.4.1 Human settlement

Ewaso Narok swamp is within a predominantly rural setting where the main economic stay is agriculture, with irrigation adding reliability and increasing the yields. Due to the economic gains from the agriculture due to low production costs, the area has attracted a lot of farmers with pressure increasing on land availability leading to encroachment on the swamp and more water abstractions leading to reduced water resources availability downstream.

2.4.2 Exotic Species of Plants

There exist numerous exotic species of trees which are unsuitable in a water catchment area, especially near wetland, which include the eucalyptus trees.

3 Measures for Conservation and Rehabilitation of the area

3.1 Proscribed Activities;

According to the relevant legal framework as discussed in Sub-Section 1.1.1 above, protected areas can be used by the neighbouring community in a sustainable manner. The activities to be undertaken within the protected area are those with zero impact on its ecological status and integrity. The following activities are specifically proscribed in a protected area:

i). Tillage or cultivation

ii). Clearing of indigenous trees or vegetation

iii). Building of permanent structures (especially boreholes and houses)

iv). Disposal of any form of waste

v). Excavation of soil or development of quarries

vi). Planting of exotic species that may have adverse effect to the water resource

3.2 Conservation Plan

The objective of the conservation plan is to protect the long-term environmental sustainability of the catchment for enhanced water resources yield and maintain its ecological functions in terms of flora and fauna. This will be achieved through:

- ***Demarcation of the wetland and its riparian zone and fence it off;***
- ***Gazettement of the swamp as a protected water catchment area;***
- ***Enforcement of the Ewaso Narok swamp management guidelines;***
- ***Control water resources abstraction from the swamp;***

Activity	*Sub-activity*	*Timeframe*	*Cost*	*Responsibility*
Demarcate the wetland and its riparian zone	Undertake cadastral survey of the area and place beacons along the boundary	1 Month	750,000	WRA, SoK
	Develop the PDP for the demarcated wetland area	1 month	1,000,000	CGL, MoLS, WRA
	Liaise with NLC for the revocation of any privately held title deeds and acquire a title deed (in trust) for the wetland	3 Months	500,000	WRA, NLC
	Fence off the demarcated area	1 Month	35,000,000	WRA, ENWRUA
	Place signs and notices to warn the public that this is a protected area	Continuous	250,000	WRA, ENWRUA
Gazette the Ewaso Narok Wetland as a protected water catchment area	Assess the status of Ewaso Narok Wetland	1 month	300,000	WRA
	Create awareness on the status of the wetland	Continuous	500,000	WRA, WRUA
	Develop guidelines and conservation plan through stakeholders' engagement	2021	2,500,000	WRA with all stakeholders
	Submit gazettement instrument to the Cabinet Secretary in charge of water	2021	200,000	WRA
Enforce the Ewaso Narok	Create awareness to stakeholders the wetland guidelines and conservation plan	2022	500,000	WRA

wetland guidelines	Enforce Ewaso Narok wetland protected area guidelines, management plan and relevant legislations	Continuous	0	WRA, National Govt
Control water resources abstraction	Enforce requirements for acquiring water use permits for any abstraction from the swamp as per the Water Act 2016 and Water Resources Management Rules 2007	Continuous	0	WRA, WRUA
Sub Total			***41,500,000***	

3.3 Rehabilitation Plan

The objective of the rehabilitation plan is to ensure the wetland achieves its optimal performance level. This will be achieved through:

- ***Removal of all inappropriate/invasive species of plants;***
- ***Re-vegetation of the wetland with water friendly/native species of trees and vegetation;***
- ***Development of alternative livelihoods to discourage farming within the wetland;***

Activity	*Sub-activity*	*Timeframe*	*Cost*	*Responsibility*
Removal of all inappropriate/ invasive species of plants	Identify and remove inappropriate and invasive tree species from the wetland	1 Year	5,000,000	WRA, KFS, NGAO, WRUA
	Exotic species control	Continuous	200,000	WRA, KFS, WRUA
Re-vegetation of the wetland with water friendly/native species of trees and vegetation	Establish indigenous plants nursery	Continuous	5,000,000	WRUA, WRA
	Grow live fence on the boundary of the wetland	Continuous	3,000,000	WRA, KFS, WRUA
	Planting and growing of propagated seedlings (Watering and tending)	1 year	2,500,000	WRUA
Development of alternative livelihoods to discourage farming within the wetland	Identification and Development of proposals for alternative livelihoods (eco-tourism, bee-keeping, agro-forestry, etc);	1 Year	10,000,000	WRA, WRUA

Sub Total			***25,700,000***	

3.4 Catchment and Water Resources Monitoring

The objective of the monitoring plan is to collect and analyse catchment and water resources data to provide information on water discharge, water quality and catchment health as a response to human activities within the neighbourhood. This will be achieved through:

- ***Establishment of a telemetric regular gauging station on Ewaso Narokand Pesi rives upstream and r downstream of the swamp to monitor water quantity and quality;***
- ***Upgrading of the Rumuruti MoW rainfall station to a fully telemetric hydro-meteorological station to monitor precipitation, evaporation, humidity and temperature;***

Activity	*Sub-activity*	*Timeframe*	*Cost*	*Responsibility*
Upgrade to telemetry status RGS 5AB04, 5AC15 (upstream) and 5AC10 (downstream) of the Swamp	Identify appropriate equipment and transmission system and install stations	3 months	7,500,000	WRA
Upgrade to a full hydro-meteorological station the rainfall station at WRA Rumuruti office compound	Identify an appropriate site to install station	Continuous	0	WRUA, WRA
	Procure, install and commission the equipment	Continuous	1,000,000	WRA
	Collect and analyse hydromet data	Continuous	0	WRA
Sub Total			***8,500,000***	

3.5 Establishment and operationalization of management structure

The objective of the management structure is to ensure that the Ewaso Narok swamp catchment protected area is managed in a sustainable manner with the involvement of all stakeholders under the leadership and coordination of WRA -

ENNBA. These guidelines envisages a budget of Kes 75,700,000 to implement it in the medium term (approximately 5 years). The management will need to raise the funds through various activities and events. This will be achieved through:

- ***Setting up the management structure with defined ToRs and mandates;***
- ***Development and implementation of resource mobilization strategies to raise funds for the management and conservation of the protected area;***

Activity	*Sub-activity*	*Timeframe*	*Cost*	*Responsibility*
Setting up the management structure	Appoint 1No. Member from each of the following stakeholders: 1. Kenya Forest Service 2. National Government Administration in Laikipia County; 3. National Environmental Management Authority; 4. Ministry of Agriculture; 5. The Ewaso Narok WRUA;	3 months	300,000	WRA
	Terms of References (ToR) will include but not limited to: ▪ To manage the catchment prudently on behalf of other stakeholders ▪ To submit quarterly reports to WRA - ENNBA on all planned and implemented activities; ▪ To develop by - laws and submit a copy to WRA – ENNBA for approval before implementation	Continuous	0	WRA, WRUA
	Mandate and responsibilities: ▪ Promote the conservation and protection of the catchment ▪ Promote equitable distribution of the resources within the catchment ▪ Promote socio-economic and environmental sustainability of the catchment	Continuous	0	WRUA, WRA
	▪ Mapping of stakeholders and potential donors; ▪ Development and marketing of resources mobilization strategies;			

	The sources of funds for the committee may include: ▪ Bee keeping ▪ Tree Nursery; ▪ Eco-tourism; ▪ Well-wishers/Donors ▪ WRA/WRUA - (WDC); ▪ Cultural/sports events	Continuous	5,000,000	WRA
Sub Total			***5,300,000***	

WRA as the agent of the National Government in the regulation of use and management of water resources, will be the coordinator of the committee. The members appointed to the Management Committee will serve on honorary basis as this will be a not for profit, non-commercial venture. The Committee will be required to solicit for funding from well-wishers and other sources to supplement the income that may be derived from activities permitted in a protected area.

The following are the proposed linkages between various stakeholders. The arrows indicate the direction of flow of information. The dotted lines indicate WRUA can also communicate directly to communities and vice versa.

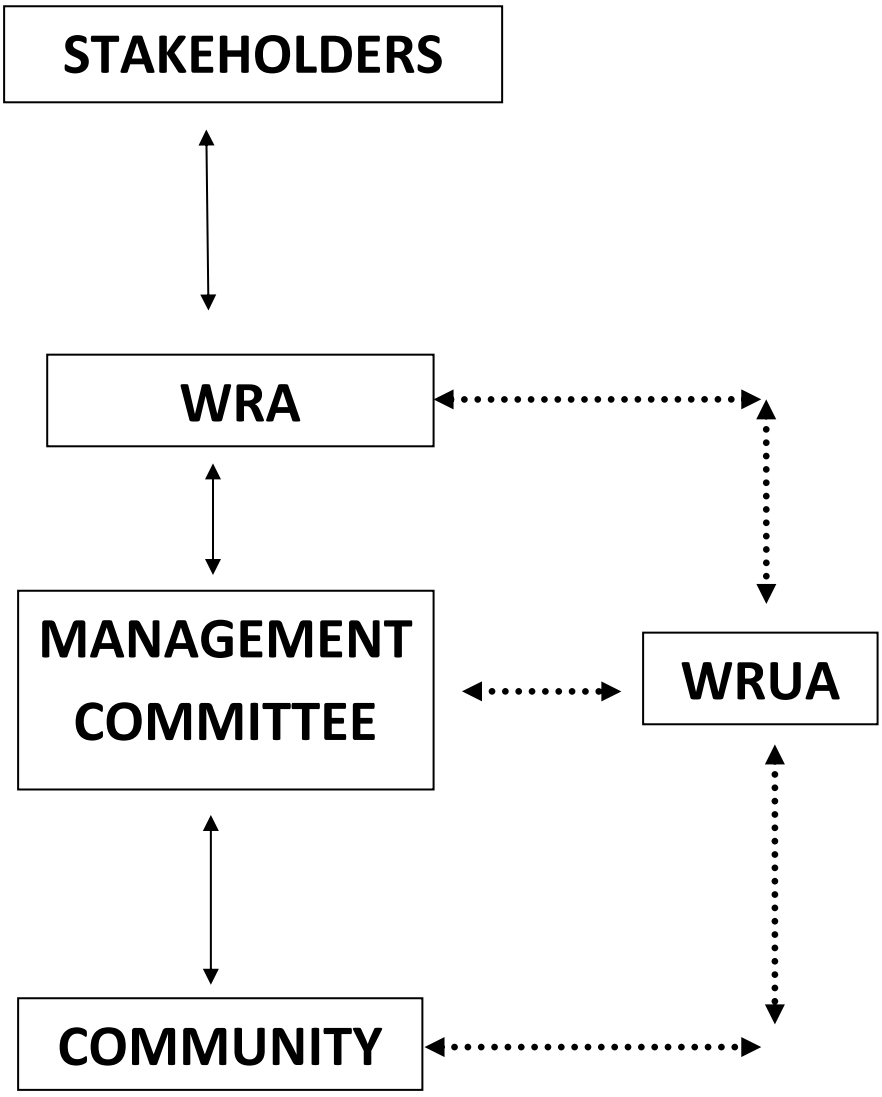

Fig.6. Reporting Linkages for the Management Committee

4 Monitoring and Evaluation Matrix

The following matrix will be used for Monitoring and Evaluation to capture detail of the progress of implementation of the planned activities.

Table.5. Monitoring and Evaluation template

Activities	Implementation Schedule		Status (% completion)	Planned Cost Ksh.	Total expenditure to date	Source of funds	Output	Comments
	start date	End date						