

CATCHMENT ACTION PLAN



MINISTRY OF WATER, SANITATION AND IRRIGATION



Pilot Project: Integrating Data into decision-making to improve the protection and restoration of inland water ecosystems

June 2022

ACTION PLAN FOR THE PROTECTION AND RESTORATION OF THE EWASO NG'IRO NORTH RIVER BASIN



Upstream Conservation



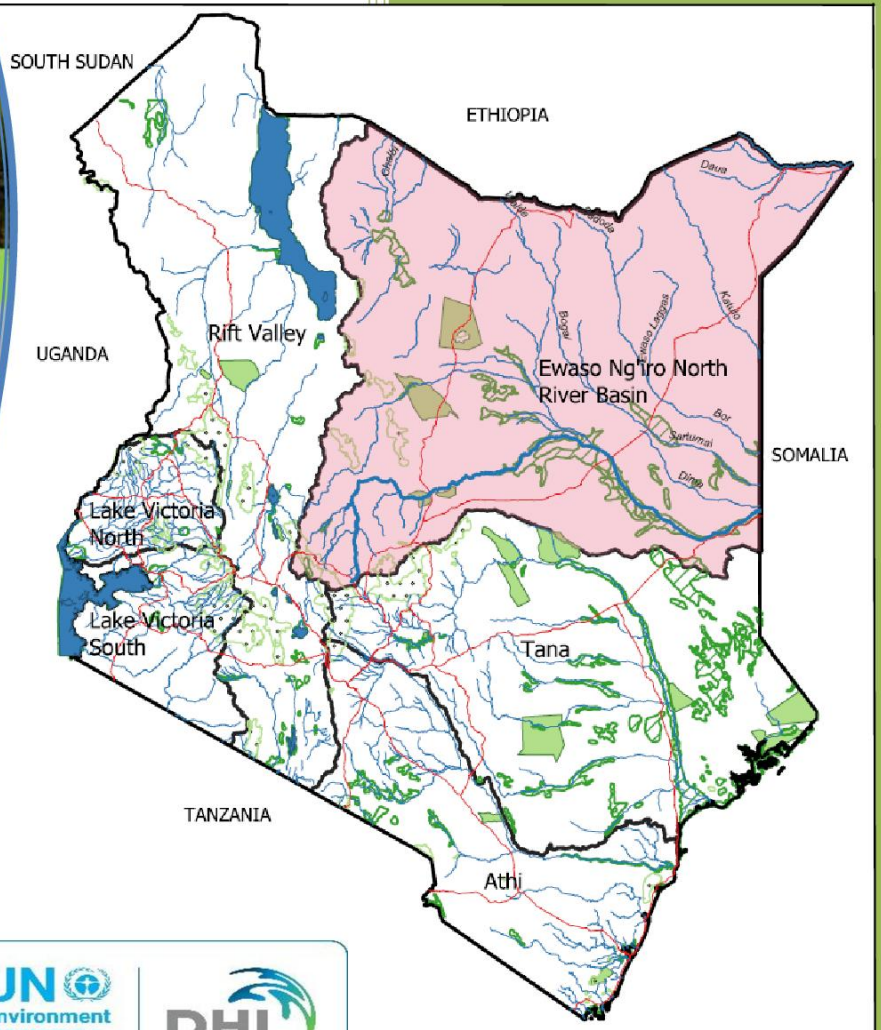
Downstream Conservation



Capacity Development



Stakeholder Engagement



SDG 6.6: Protection & Restoration of Freshwater Ecosystems

1. Executive Summary

Since the adoption of the United Nations 2030 Agenda for Sustainable Development, the Government of Kenya, has domesticated the integration of the SDGs into national and county policy and planning frameworks. The UN 2030 Agenda is based on global sustainable development goals and covers the five critical pillars: people, planet, prosperity, peace and partnerships. It contains 17 goals and 169 targets that provide broad guidelines for sustainable development. The 17 Goals are all interconnected, and the aim is that these should be achieved by 2030. All the SDGs have linkages to, and are important for, water security.

The pilot project *Integrating freshwater data into sector-wide decision making to improve the protection and restoration of freshwater ecosystems* is an initiative designed to assist countries in achieving SDG target 6.6 which seeks to protect and restore ecosystems by monitoring progress under the indicator 6.6.1 “Change in the extent of water-related ecosystems over time”.

The pilot project is implemented by GWP and Cap-Net, with the support of the [United Nations Environment Programme \(UNEP\)](#) and the [United Nations Development Programme \(UNDP\)](#), under the guidance of [UNEP-DHI](#). In-country activities were implemented in partnership with national governments, working with relevant stakeholders in each country - including local governments, civil society, academia, international organisations and the private sector.

The overarching objective was to encourage and promote the integration of environmental data within relevant decision-making processes through multi-stakeholder engagement, to improve the protection, management, and restoration of freshwater ecosystems.

The pilot project focused on three target countries (Kenya, Kazakhstan and Argentina). It was required that each of these three target countries identifies

and prioritizes key ecosystems or watersheds and endorses related action plans for protection and restoration. The first step in implementation was a Capacity Needs Assessment followed by capacity development, awareness raising and training for Senior and middle Management from mandated institutions and other key stakeholders (Error! Reference source not found.), followed by the ecosystem prioritization which was done in a workshop held in Nairobi on 27th September 2021 by stakeholders drawn from different key mandated government institutions, namely, the Ministry of Water, Sanitation and Irrigation (MWSI), National Environment Management Authority (NEMA), Kenya Water Towers Agency (KWTA), Kenya Forest Service (KFS), the private sector and Non-governmental Organizations/Civil Society Organizations (Error! Reference source not found.). This process led to the identification of the Ewaso Ng'iro North River Basin as a high priority ecosystem to be restored and protected.

Subsequently a draft action plan was developed in a workshop held in Isiolo from 16th-17th December 2021 (Annex 3). During the stakeholder consultations, it became apparent that there were many works, studies and plans on the basin and there was need to learn from them and build on these experiences to avoid duplication of effort. This report presents the strategic context of the basin, the action planning process, as well as the final action plan developed for the protection and restoration of the Ewaso Ng'iro North River Basin.

The overall goal of the action plan is to support the implementation of SDG 6.6.1 and the broader water-related goals in the Ewaso Ng'iro River Basin, by identifying, prioritising and implementing short to medium term key actions.

The priority actions identified are as follows:

1. Strengthening of institutional capacity, participation and coordination
2. Improving stakeholders' engagement and coordination
3. Water Quality Management
4. Groundwater Management
5. Hydro-meteorological monitoring
6. Strengthen the enabling environment to support institutions

7. *Improve Water Demand Management and sustainability*
8. *Improve Water Security and Governance*
9. *Protection and improvement of Catchment Areas and Water Towers*

Table of Contents

1. Executive Summary	1
2. Background and Strategic Context	6
1.1. Catchment Characteristics	6
1.2. Hydrometeorological Data	13
3. The Development of the Action Plan	19
1.3. Methodology and Planning Process	19
1.2. Overall Coordination and implementation	20
4. Overarching Goals and Objectives of the action plan	23
1.3. Goal and Objectives	23
5. An Overview of Actions	24
6. Risks and Mitigation	34
7. Monitoring and Evaluation	34
8. References	34
9. Annexes	36

List of Figures

<i>Figure 1: Map showing all the Counties of the Ewaso Ng'iro River Basin</i>	9
<i>Figure 2: Schematization of the Intermediate and Final Ecosystem Services and Benefits of the ENN River Basin</i>	10
<i>Figure 3: Map of the Ewaso Ng'iro North River Basin from the SDG 6.6.1 Explorer Platform</i> ..	16
<i>Figure 4: a) Changes in the extent of the permanent and seasonal waters of the Sub-basin and b) Changes in the extent of Reservoirs of the basin Source: FEE 6.6.1. 2022</i>	17

<i>Figure 5: Relative percentages of a) permanent and b) seasonal transition types for the aquatic ecosystems of Ewaso Ng'iro basin. Source: FEE 6.6.1. 2022</i>	18
<i>Figure 6: Current institutional framework for the water sector in Kenya</i>	21

List of Tables

<i>Table 1: Main categories under which key issues in ENN Ecosystem are classified</i>	11
<i>Table 2: Priority actions for implementation</i>	24

List of Annexes

<i>Annex 1: Participants of the Awareness Training workshop (22nd September 2021)</i>	36
<i>Annex 2: Participants of Workshop on Prioritization of Freshwater Ecosystems (27 September 2021)</i>	41
<i>Annex 3: Action Planning Workshop, in Isiolo (16th-17th December 2021)</i>	43
<i>Annex 4: Agenda</i>	47
<i>Annex 5: CFAs and Status of Participatory Forest Management Plans (PFMP)</i>	50
<i>Annex 6: WRUAs and status of Sub-catchment management plans (SCAMPS)</i>	51
<i>Annex 7: Photos</i>	56

2. Background and Strategic Context

1.1. Catchment Characteristics

The Ewaso Ng'iro North Catchment Area covers an area of about 210,000 km². The catchment area extends from Latitude S 00° 25' to N 04° 29' and from Longitude E 36° 20' to E 41° 55'. Altitude ranges from 150m above sea level at the Lorian swamp to the Mount Kenya whose peak is 5,199m above sea level. Most of the catchment lies below 1,000m above sea level. The catchment neighbors Somalia to the East and Ethiopia to the North, Rift Valley to the West and Tana catchment to the South. Ewaso Ng'iro North Catchment Area has a mean annual rainfall of 411 mm which ranges from over 800 mm in the highlands to less than 400 mm in the arid and semi-arid lands (ASAL) areas. The rainfall is more erratic temporally and spatially in the ASAL areas¹.

The Ewaso Ng'iro North River is the only major river in the basin. It originates from the slopes of Mt. Kenya and Aberdare Range, with a number of dry river valleys joining it at its middle and lower reaches. It has the following tributaries: Ewaso Narok, Likiudu, Liliaba, Ngare Ndare, Ngusishi, Timau, Sirimon, Teleswani, Ontulili, Likii, Nanyuki, Rongai, Burguret, NaroMoru, Isiolo, Moyok, Ngobit, Suguroi, Pesi and Mutara. The river flows into the Lorian swamp where it is an important source of water for recharging the groundwater and maintaining of vegetation cover. The river crosses seven counties namely, Nyandarua, Laikipia, Meru, Samburu, Isiolo, Garissa and Wajir (Figure 1).

The climate of the ENN Ecosystem is brought about by the topography of the basin, and the movements of two air masses over the Inter-Tropical Convergence Zone (ITCZ). Average annual maximum daily temperatures vary from 15°C to 37°C across the basin, while the average annual minimum night temperatures vary from 3°C to 23°C (Ref). The average mean annual precipitation (MAP) is approximately

¹ Ewaso Ng'iro North Catchment Area- Catchment Management Strategy (2015-2022)

380 mm across the basin. The southwestern parts of the basin receive higher rainfall, with some areas receiving a MAP above 1000 mm, while the MAP reduces to less than 300 mm in the central and eastern parts of the basin. Two periods of rainfall occur during the year, namely the long rains between March and May, and the short rains from October to November. During November to March dry winds dominate the eastern part of the country. By about April, the wind system has reversed and the trade winds from the ocean are experienced.

The climate change analysis prediction of the ecosystem is an increase in Mean Annual Precipitation across the ENN River Basin from 377 mm to 418 mm by 2050, while day and night temperatures in the basin are expected to increase by up to 1.0°C and 1.2°C respectively by 2050. Natural runoff in the basin is expected to increase in most sub-basins by between 5% and 15%, with some sub-basins slightly lower or higher. The total surface water runoff from the ENN River Basin is projected to increase by almost 9% by 2050.

The main area susceptible to flooding in the ENN River Basin is Isiolo, Archer's Post, Wajir, Mandera, Laikipia and parts of Garissa County. Droughts are a major challenge in the whole Basin, as most of the area is categorized as ASAL. There is no large dam in the Basin and limited water storage in the form of small dams and pans. As a result, available storage is insufficient to mitigate the effects of droughts. The main types of flood damage involve the destruction of houses, agricultural products and livestock loss, contamination of water sources, worsening sanitary conditions and muddy road conditions. Flooding also negatively impacts development within the Basin and issues related to flood management are often priority issues identified during sub-catchment management planning.

The vegetation cover is mainly savanna and grassy semi-desert vegetation. Mosaics of forest cover are also scattered across the catchment. The forests in the basin comprise a critical part of the ENN

hydrological ecosystem and have numerous economic, social, cultural, and ecological values, as they provide essential goods and services. Human encroachment is threatening the forest reserves in the basin and there has been a significant loss of vegetation cover.

The Shaba, Buffalo Springs and Samburu National Reserves are situated along the Ewaso Ng'iro River while a large area of the slopes of Mount Kenya is designated as a National Park. These areas are protected by Kenya Wildlife Service (KWS). The Kenya Water Towers (KWTA) is responsible for the management of areas considered to be water towers for downstream water supply. The ENN Ecosystem has nine Water Towers and two non-gazetted Water Towers (Ngaya Hills and Mukogodo).

Land use in the ENN Ecosystem includes forest, grassland/rangeland, and agricultural use. The Basin has a limited population density and therefore for most of the area there is insignificant urban and built-up areas. The dominant land use in the Basin are rangelands although there is agriculture in the upper and lower basin. There are certain areas on steep slopes where land use is unsuitable for crops and creates a problem when used for livestock because overgrazing leads to rapid and often irreversible sheet erosion².

² Ewaso Ng'iro North Integrated Water Resources Management and Development Plan (2020)

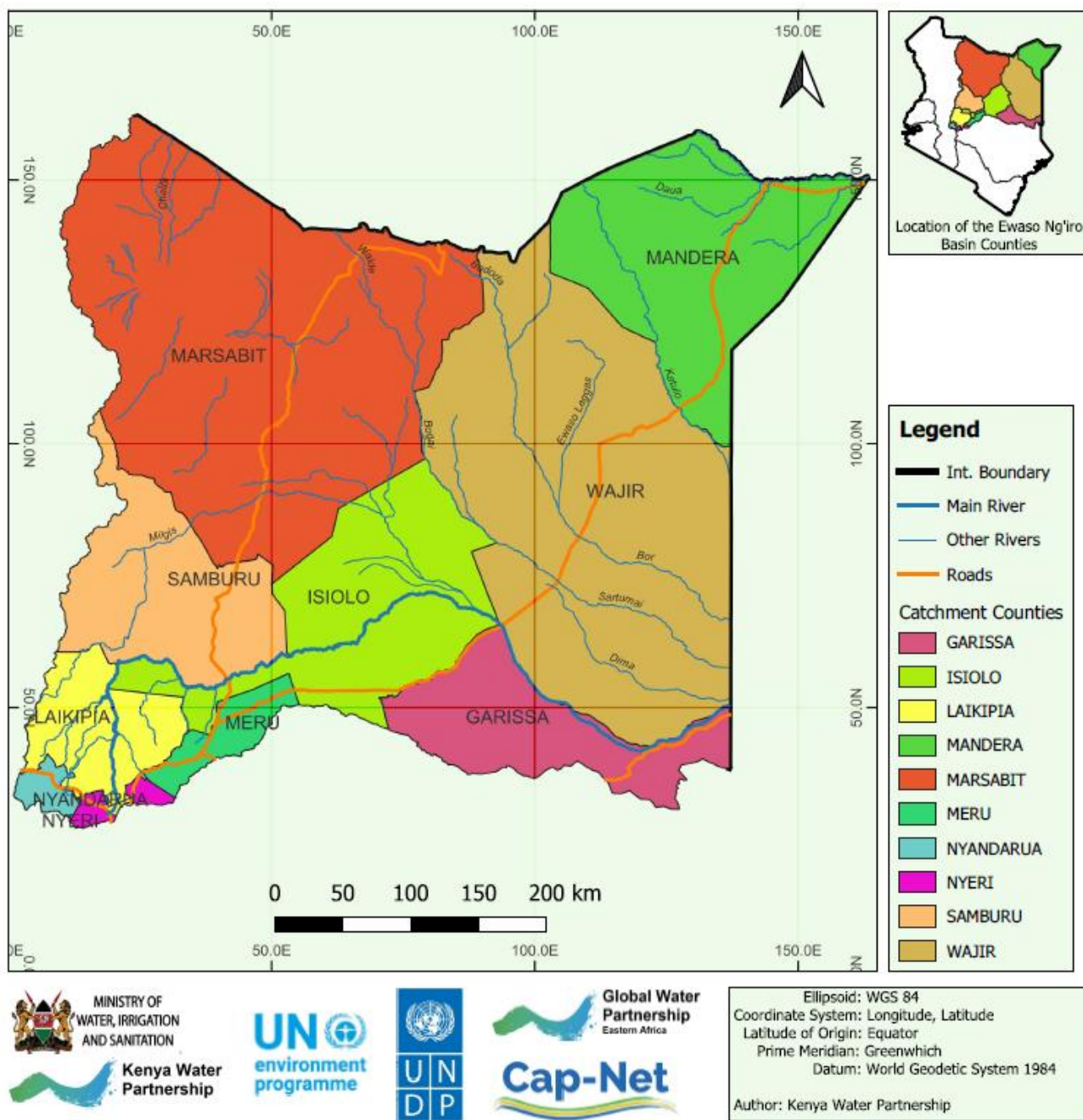


Figure 1: Map showing all the Counties of the Ewaso Ng'iro River Basin

The Ewaso Ng'iro North River Basin which is about 70% ASAL is critical to the survival of pastoral communities and wildlife in Northern Kenya. The Basin is a critical in providing essential ecosystem goods and services. Ecosystem services provided by the Ewaso Ng'iro North River basin are shown in (Figure 2) below³. In the past, the Basin did not attract many

³ Polly Ericksen, Jan de Leeuw, Mohammed Said, Silvia Silvestri & Lokman Zaibet (2012) Mapping ecosystem services in the Ewaso Ng'iro catchment, International Journal of Biodiversity Science, Ecosystem Services & Management, 8:1-2, 122-134, DOI: [10.1080/21513732.2011.651487](https://doi.org/10.1080/21513732.2011.651487)

donors who could look at the basin holistically and have action plans that would address the plight and the poverty levels and harsh conditions on both people and the biodiversity.

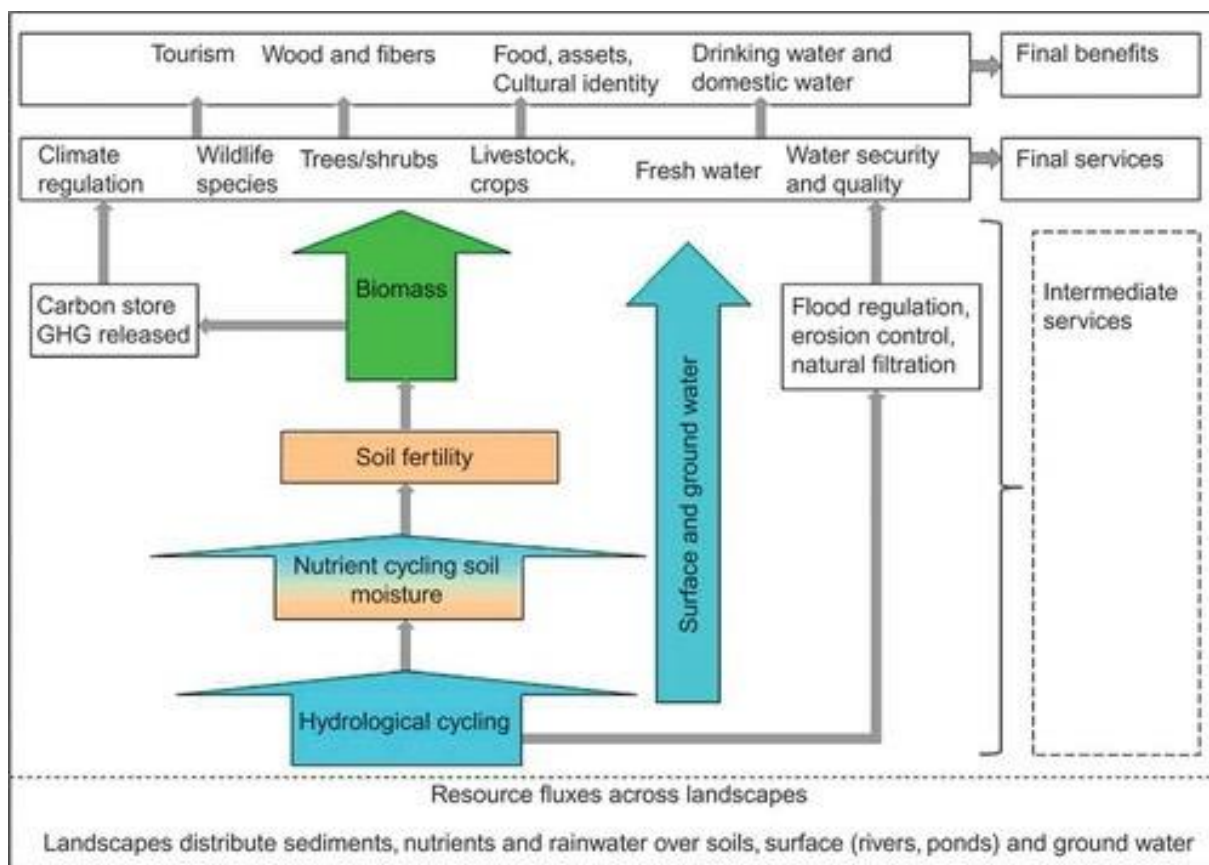


Figure 2: Schematization of the Intermediate and Final Ecosystem Services and Benefits of the ENN River Basin

The Ewaso Ng'iro River Basin faces many threats and challenges. Some of the challenges that were identified by stakeholders during a workshop held in Isiolo are, over-abstraction; unregulated abstractions leading to water conflicts; climate change, drying up of springs; drought; uncontrolled sand harvesting; large demand for irrigation water; degradation of groundwater quality by agricultural chemicals; water pollution; destruction of forests; soil erosion; erratic rainfall; unreliable river flow; inadequate data; deforestation; overgrazing; siltation and reduced water levels in pans and dams; poor land use practices; water conflicts; poor water governance; water scarcity; lack of coordination; forest fires; insecurity; flooding especially in the lower parts of the catchment, among others.

Other challenges are, encroachment on springs; water use conflicts between farmers, wildlife and pastoralists; salinity of groundwater, encroachment on springs; data gaps due to vandalism of regular gauging stations; inadequate monitoring equipment; illegal abstraction of water; encroachment on riparian land and wetlands; and inability to form WRUAs in all sub drainage basins⁴. In addition, a comprehensive report written in 2020 by the Ministry of Water, Sanitation and Irrigation and Water Resources Authority, and titled 'Ewaso Ng'iro North Integrated Water Resources Management and Development Plan' summarizes the key issues which were identified and prioritized by another group of stakeholders from the same basin as presented in **Table 1**. The issues were further formulated into 10 Key Strategic Areas (KSAs), namely, KSA 1: Catchment Management; KSA 2: Water resource protection; KSA 3: Groundwater management; KSA 4: Water quality management; KSA 5: Climate change adaptation and preparedness; KSA 6: Flood and drought management; KSA 7: Hydrometeorological Monitoring; KSA 8: Water Resources Development; KSA 9: Strengthen the Institutional Frameworks; KSA 10: Strengthen the enabling environment to support institutions⁵. The report suggests that the KSAs can be used as a planning tool for key role players, without these institutions needing to sit in the same room to avoid duplication of effort.

Table 1: Main categories under which key issues in ENN Ecosystem are classified

<p>Biophysical issues</p>	<p>Climate: Inadequate flood preparedness; Inadequate drought preparedness; Climate change</p> <p>Environment: Poor land use and catchment management; Natural vegetation loss; Biodiversity loss</p>
<p>Socio-economic issues</p>	<p>Demographics: Population growth; Education levels; Poverty</p> <p>Economics: Economic activity; Employment; Livelihoods</p> <p>Standard of living: Water supply and sanitation; Food security; Disaster preparedness</p>

⁴ Ewaso Ng'iro North Catchment Area- Catchment Management Strategy (2015-2022)

⁵ Ewaso Ng'iro North Integrated Water Resources Management and Development Plan (2020)

<p>Water resources availability, management, and development issues</p>	<p>Surface water resources: Spatial and temporal variability; Inadequate protection; Poor water quality</p> <p>Groundwater resources: Inadequate protection; Poor water quality</p> <p>Inadequate water resources infrastructure: Bulk water supply and transfers; Limited formal irrigation schemes; Insufficient water supply schemes; Funding for future projects</p> <p>Hydrometeorological: Inadequate monitoring network and monitoring; water allocation and use</p>
<p>Institutional issues</p>	<p>Institutional arrangements: National policies and legislation; National institutions; Basin and sub-basin institutions; County governments; Partnerships and engagements</p> <p>Enabling environment</p> <p>Transboundary and trans-county issues</p>

Source: EWASO Ng'iro North Integrated Water Resources Management and Development Plan, August 2020

In addition to the above report, there are other works, studies and plans on the basin and we need to learn from and build on these experiences to avoid duplication of effort. For instance, the Center for Training and Integrated Research in ASAL Development (CETRAD) and Laikipia Wildlife forum have both worked in the region for over 30 years individually on water issues and Natural resources Management, respectively. In 2016, water issues in the basin became a serious concern and various actors in the basin decided to establish the Mount Kenya Ewaso Water Partnership (MKEWP), a Public Private Partnership to address collaboratively water use and management in the basin.

The MKEWP Strategic plan (2018 to 2022)⁶ summarises five priority areas of immediate actions if the basin was to be water secure to support all its people, wild animals and all biodiversity. These are (1) Strengthen Institutional capacity, participation and coordination for IWRM; (2)

⁶ MKEWP Strategic plan (2018 to 2022)

Improve water demand and sustainability; (3) Improve water security and governance (4) Enhance knowledge management and communication (5) Enhance MKEWP Capacity for IWRM. These priorities complement the KSAs highlighted above, and form the basis to immediate needs as spelt out in actions in this action plan.

1.2. Hydrometeorological Data

a) Status and challenges

Kenya's climatic conditions have been changing in many parts of the country and rainfall is becoming more unpredictable every season and year (Makenzi et al., 2013). As a result of this, many regions of the world including Kenya are already facing a formidable freshwater management challenge. One of the most important factors influencing hydrological processes in a river basin like the Ewaso Ng'iro is its weather/climate. Increased uncertainty of the weather is a key characteristic of a changing climate. As extreme events keep occurring more frequently than before, loss of property, livelihoods and even life, lead to economic losses where these events occur. Enormous environmental and economic losses resulting from these extreme climatic events are a clear indication that there is need to collect reliable hydrometeorological data and integrate it for planning, decision making and policy making in the water sector in Kenya.

The generation and collection of authentic and regionally representative weather and hydrological data is an important aspect of climate change studies and adaptation in Kenya. The better the information available, the more the climate can be understood, and the more accurately future conditions can be assessed. But data availability is a general problem in hydrometeorological studies due to a number of reasons (Rwigi, 2014) and this often results in lack of coverage in areas of interest. Some of the reasons for the data gap include lack of reliable government funding, staffing and technological infrastructure. Data and

information management is weak and uncoordinated; water quality assessment and monitoring are irregular, and continues to utilize unsustainable approaches without community involvement. The sector has weak surveillance and monitoring of water resources⁷. Key issues that affect monitoring intervention are; incomplete monitoring network rationalization; inadequate monitoring equipment; inadequate data quality; data gaps; low water resources monitoring capacity; data management and sharing platforms are not well established; insufficient analysis of data for information processing and dissemination; low level automation of monitoring stations; inadequate laboratory facilities; and inadequate financial resources to operate and maintain monitoring stations.⁸

Undoubtedly, inadequate data is one of the challenges facing water resources management and development in Kenya, ENN basin is no exception. Attempts have been made over time to address the challenge. The Kenya Meteorological Department, the agency charged with providing official climate information and early warnings, and the Water Resources Authority have attempted to collect hydrometeorological data for use by stakeholders. But data on the Ewaso Ng'iro catchment, as is for other catchments in Kenya, is unreliable in most cases because of poor collection tools and validation methods. The collection of hydrometeorological data has proven to be one of the greatest challenges because of their spatial and temporal variability and distribution. To mitigate this, more efforts geared at improving efficiency of observation tools, collection methods, transmission platforms and application by data users have to become the cornerstone of the management and adaptation of freshwater ecosystems.

b) Freshwater Ecosystem Explorer

⁷ Water Resources Authority Strategic Plan (2018 - 2022)

⁸ Ewaso Ng'iro North Catchment Area- Catchment Management Strategy (2015-2022)

Lack of reliable data by local agencies should not be an excuse to abandon monitoring, protection and restoration of freshwater ecosystems. Water-related ecosystems possess enormous biological, social, educational and economic values. They sustain the global hydrological cycle, carbon cycle and nutrient cycles. They provide natural purified freshwater, regulate flows and extreme conditions. No effort at the local or international level should be spared. SDG target 6.6 seeks to halt the degradation and destruction of water-related ecosystems and to assist the recovery of those already degraded. SDG indicator 6.6.1 tracks changes in different types of water-related ecosystems, enabling decision makers to determine the extent of ecosystem change over time.

The SDG 6.6.1 Explorer Platform (<https://www.sdg661.app/>), exists to serve countries with accurate, high resolution, time-series data on freshwater. The data should be used by countries to track national progress towards achieving SDG target 6.6; to inform all sector-wide decision-making processes that may impact the quantity and quality of water found in freshwater ecosystems; and drive action to secure their immediate protection and restoration. The Freshwater Ecosystems Explorer is a free and easy to use data platform. It provides accurate, up-to-date, high-resolution geospatial data depicting the extent freshwater ecosystems change over time. The available data and methods used in piecing together the data and maps which can be visualized and downloaded at national, sub-national and basin levels are very reliable. The data includes five-year rolling annual averages which can be used to track long-term change in water-related ecosystems, with the 2000-2004 data being used as a baseline. The five-year rolling average time series available on the Explorer Platform directly feed into the official reporting on Sustainable Development Goal indicator 6.6.1.

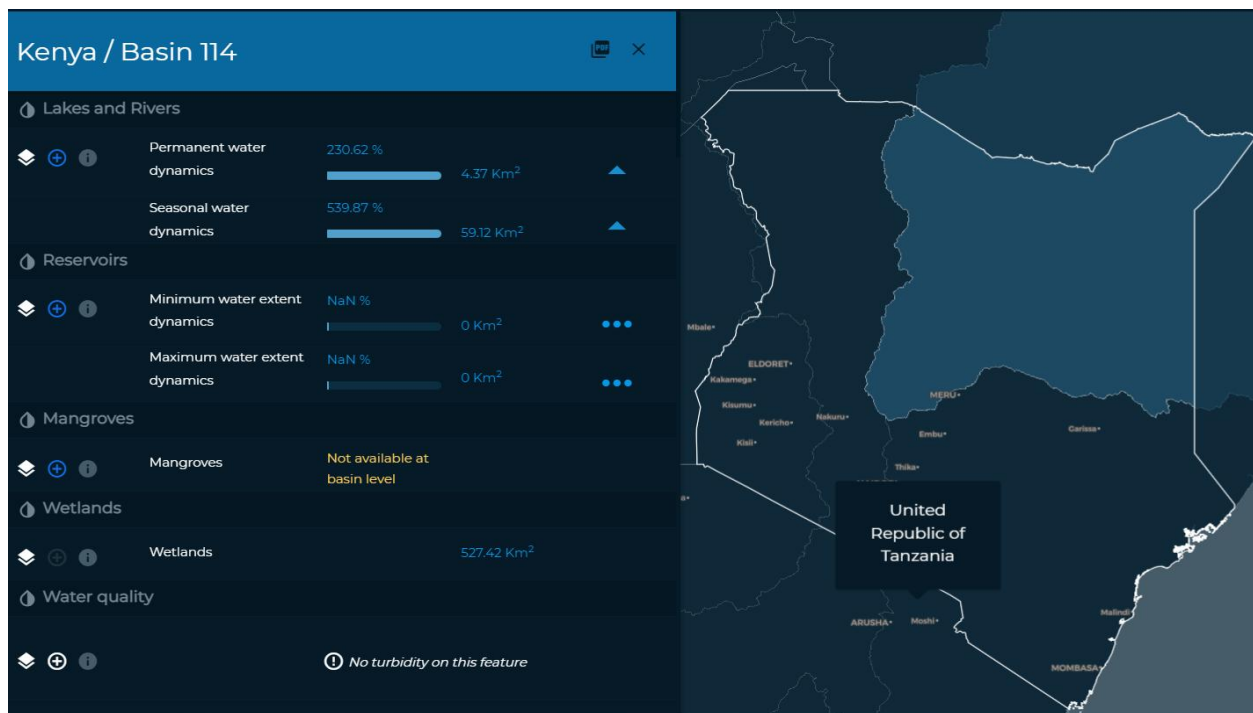


Figure 3: Map of the Ewaso Ng'iro North River Basin from the SDG 6.6.1 Explorer Platform

Data from the explorer 6.6.1 indicator was used to monitor the extent of the changes in the water dynamics in the Ewaso Ng'iro Basin – Basin 114 (Figure 3). The basin covers an area of 209 918 km² (as per HydroBASINS data), which is approximately 36% of the total area of Kenya. In the basin, permanent and seasonal water data was analysed. The calculations were made using as a reference the average of the five-year period 2001-2005, and the change to the year 2022 was estimated. The five-year averages are used for the Sustainable Development Goal (SDG) indicator 6.6.1 as the purpose of the SDG is related to tracking longer term change.

The data show that since the year 2000, a total increase of approximately 4.37 km² in the extension of permanent water (rivers and lakes) in the basin, representing 230.62% gain. Seasonal water on the other hand, increased by 59.12 Km² representing 539.87% increase. It is very evident that since the year 2000, there has been a steady increase in the extent of seasonal water bodies in Ewaso Ng'iro basin.

From a low of 10 Km² in 2000 to a high of 82.9 Km² in 2016. There is an exception however in the year 2014 when the coverage area dropped to 32.1 Km² (Figure 4a).

With regards to permanent water transitions (Figure 5a) the data archived on Freshwater ecosystem explorer reveals that 2.4% (1.72 Km²) of areas with Permanent water bodies have now become seasonal water bodies. On the other hand, 1.3% (0.07 Km²) of areas which had seasonal water bodies have lost their water and are no longer wetlands. The water transitions from the Global Surface Water Explorer is shown as the map underlying the explorer site. The map shows changes in water state between the first year and the last year of observation.

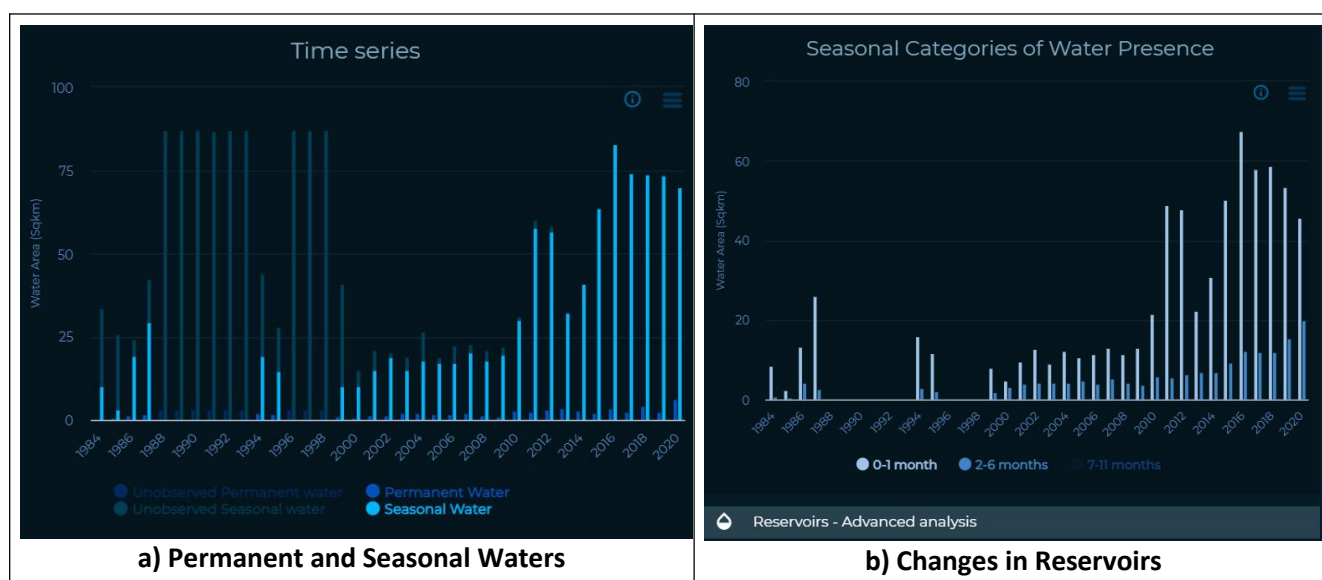


Figure 4: a) Changes in the extent of the permanent and seasonal waters of the Sub-basin and b) Changes in the extent of Reservoirs of the basin Source: FEE 6.6.1. 2022

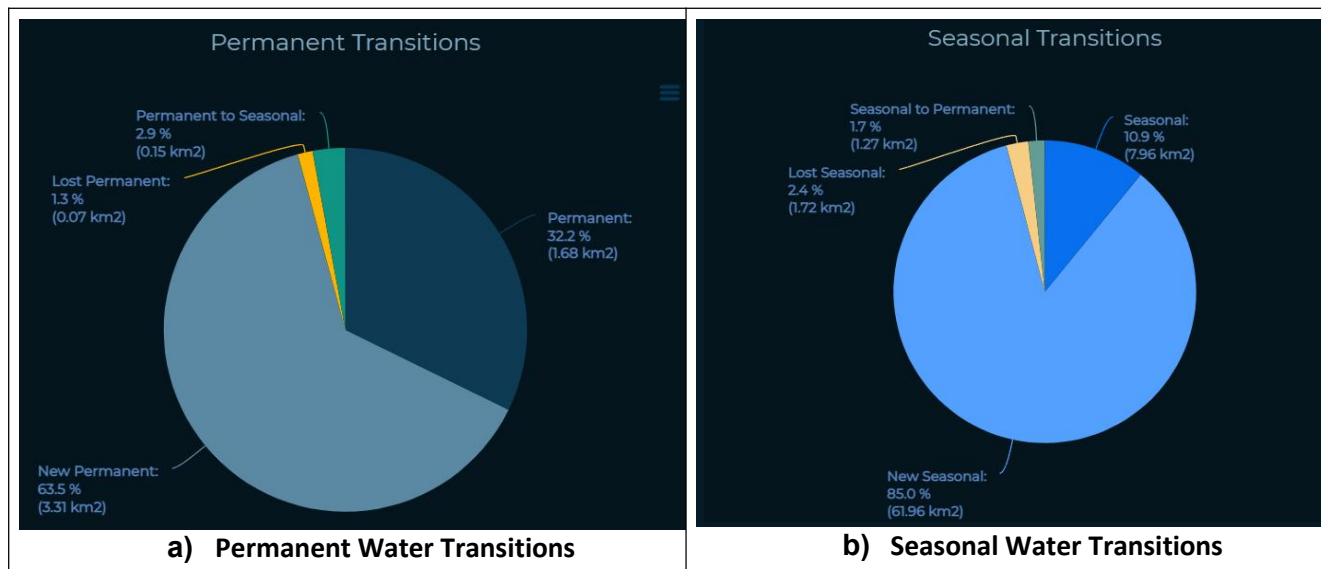


Figure 5: Relative percentages of a) permanent and b) seasonal transition types for the aquatic ecosystems of Ewaso Ng'iro basin. Source: FEE 6.6.1. 2022

These data uncover interesting trends, which are coherent with a number of climate projections as well as with dynamics observed in the Great Rift Valley over the past decade. More data and analyses would be needed however to understand the changes experienced, refine hydroclimatic projections, and determine appropriate management responses. These questions strengthen the need for increased access to hydrometeorological data and its analysis.

3. The Development of the Action Plan

1.3. Methodology and Planning Process

Following the prioritisation of Ewaso Ng'iro North River Basin as a high priority ecosystem for protection and restoration, a workshop was convened in Isiolo by Kenya Water Partnership to bring together key stakeholders (**Annex 3**), to prepare a draft action plan. The stakeholders identified issues and challenges in the basin alongside the Key Strategic Areas from the Ewaso Ng'iro Catchment Integrated Water Resources Management and development plan, with the guidance of the consultant. The stakeholders adopted the KSAs, discussed them in groups and developed related necessary actions to be taken, expected results, timeframe, lead organisation, and source(s) of funds.

The information gathered from groupwork was presented in a plenary for clarification, adoption and endorsement as components to go into the draft action plan. The draft action plan was further refined by a smaller group of stakeholders, taking into consideration other works and existing plans for the basin and priority actions **Table 1**, identified and agreed upon. The draft action plan was subjected to peer review and once again refined and endorsed by key stakeholders in a virtual workshop held on 11th May 2022. Participants were drawn from different key institutions, namely, the Ministry of Water, Sanitation and Irrigation (MWSI), Water Resources Authority (WRA), Mount Kenya Ewaso Water Partnership (MKWEP), Likii Water Resources Users Association (WRUA), Center for Training and Integrated Research in ASAL Development (CETRAD), Data Core Limited, Kenya Meteorological Department (KMD) and Policy Research and Institutional Development at Resilience Centre. Also, comments on the draft action plan were received from the Kenya Forest Service (KFS), Ewaso Ng'iro North Development Authority (ENNDA) and UNEP, Regional office for Africa and incorporated.

1.2. Overall Coordination and implementation

Figure 6 shows the current institutional framework for the water sector in Kenya. The Ministry of Water, Sanitation and Irrigation (MWSI) is at the apex of the management of water resources and it has a responsibility to coordinate the sector. MWSI will therefore take the responsibility as the lead during the implementation of the action plan. Its Agency the Water Resources Authority (WRA) has a mandate through delegated authority on behalf of the National government to safeguard the right to clean water by ensuring that there is proper regulation of the management and use of water resources, in order to ensure sufficient water for everyone- now and in the future. This mandate is delivered in partnership with stakeholders. WRA is underfunded and lacks capacity to do their Regulatory role. Furthermore, WRA still holds onto both roles of regulation and management, therefore rendering Water Resources Users Associations very weak.

The Water Act 2016 provides for the establishment of a Basin Water Resources Committee (BWRC) in each respective basin area and which shall be responsible for the management of the water resources within a respective basin area. There are no BWRC at the moment. Once BWRC are established, they shall collect and analyse information on water resources. In addition, they shall facilitate the establishment and operations of unestablished water Resource User Associations.

The Water Resources Users' Associations (WRUA) mandate is to enhance participation of the local community and stakeholders in water resources management, to ensure not only sustainable and equitable use of the available resource in view of the various competing demands, but also basin conservation through implementation of various conservation activities. The management role of WRUAs at the grassroot level is key to achieving the set objectives. These legal entities have an important role of monitoring pollution, water discharge, water abstractions and catchment integrity. These organizations however lack finances to carry out their mandates. Currently they depend on meager member subscriptions, hence the need to be supported as they are already in place.

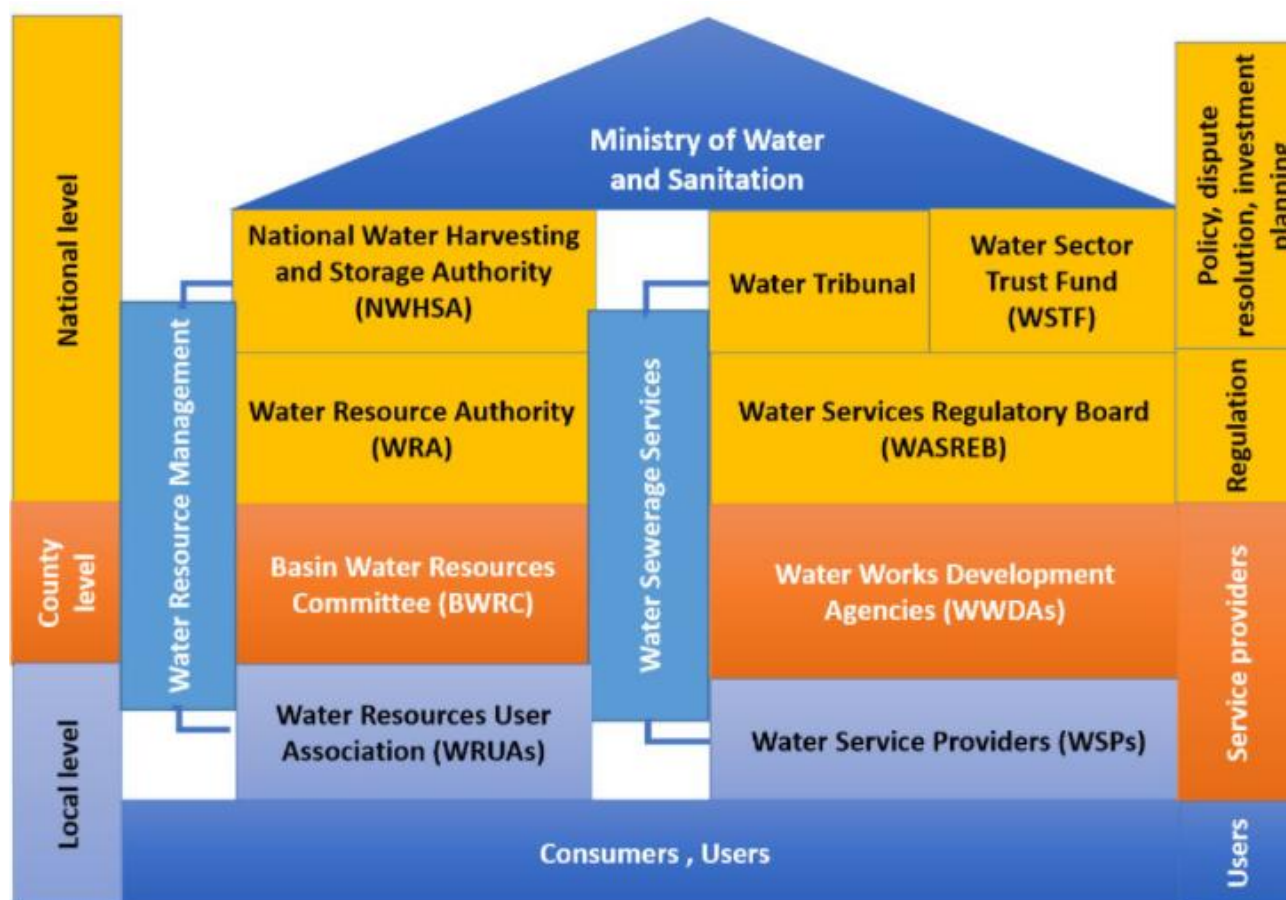


Figure 6: Current institutional framework for the water sector in Kenya ⁹

Institutions identified as relevant in the implementation of the SDG 6.6.1 action plan in Ewaso Ng'iro North River Basin include the following;

- i. Ministry of Water, Sanitation and Irrigation
- ii. Water Resources Authority
- iii. Ministry of Environment & Forestry
- iv. The National Environment Management Authority (NEMA)
- v. The Kenya Water Towers Agency (KWTA)
- vi. Kenya Forest Service (KFS)
- vii. The Kenya Meteorological Department (KMD)
- viii. Centre for Training and Integrated Research in ASAL Development (CETRAD)

⁹ <https://www.waterreforms.go.ke/institutional-framework-for-the-water-sector/>

- ix. *The County Governments of the ENN Basin*
- x. *Ewaso Ng'iro North Development Authority (ENNDAA)*
- xi. *Community based organizations and Non-governmental Organisations including Water Resources Users Associations, Forests Associations, Irrigation Water Users*
- xii. *Development Partners*
- xiii. *CapNet/WaterCap*
- xiv. *Global Water Partnership EA*
- xv. *Mount Kenya Ewaso Water Partnership (Public-Private Partnership)*
- xvi. *Kenya Water Partnership*

The Kenya Water Partnership will coordinate the multi-stakeholder action activities. There are many players working in the basin and can result in the duplication of efforts and hence the need for strong coordination mechanism.

4. Overarching Goals and Objectives of the action plan

1.3. Goal and Objectives

The overall goal of the action plan is to support the implementation of SDG 6.6.1 and the broader water-related goals in the Ewaso Ng'iro River Basin, by identifying, prioritising and implementing short to medium term key actions.

The priority actions identified are as follows:

1. Strengthening of institutional capacity, participation and coordination
2. Improving stakeholders' engagement and coordination
3. Water Quality Management
4. Groundwater Management
5. Hydro-meteorological monitoring
6. Strengthen the enabling environment to support institutions
7. Improve Water Demand Management and sustainability
8. Improve Water Security and Governance
9. Protection and improvement of Catchment Areas and Water Towers

The above areas of concern will form a strong foundation for sustainable Basin Integrated Water Resources Management (IWRM). They will also address the issue of protection and restoration of the ecosystem and the effects of Climate change in the medium term (up to four years). The long-term solutions can be addressed later by building on these short to medium term measures.

5. An Overview of Actions

The identified priority actions are presented in **Table 2** below:

<i>Table 2: Priority actions for implementation</i>					
<i>No.</i>	<i>Title and Description of Action</i>	<i>Expected Results</i>	<i>Realisation Time</i>	<i>Lead Organization to ensure that the action takes place</i>	<i>Estimated cost and proposed Source of Funding Kshs</i>
1. Strengthening of Institutional Capacity, participation and coordination					
1	Conduct Organisational Capacity Assessment for institutions with mandate on Ecosystem restoration, identify capacity gaps and propose strengthening measures	1. All water institutions in basin assessed and gaps identified 2. Needs strengthened	Initial 6 months	Kenya Water Partnership/ WaterCap	2.5 million
2	Undertake training and capacity building for the newly formed Basin Water Resource Committee	All actors trained	6 months	WaterCap WRA MWSI	12.0 million

3	<i>Review and propose and adopt institutional framework needed to facilitate knowledge management and planning for interventions</i>	<i>Institutional framework drawn and adopted</i>	<i>6 months</i>	<i>WRA KWP</i>	<i>4.0 million</i>
4	<i>Strengthen linkages between county governments and WRUAs and Community Forests Associations (CFAs)</i>	<i>All actors draw out collaboration framework at Ward level (2,000) stakeholders</i>	<i>6 months</i>	<i>MKEWP</i>	<i>6.0 million</i>
5	<i>Facilitate development of multi-stakeholder workplans and budgets including incorporation into CIDP, ADPs GoK Medium Term Plans</i>	<i>Sub-catchment management plans (SCAMPS) and Participatory Forest Management Plans (PFMP) adopted by Counties</i>	<i>4 years</i>	<i>KWP, WRA County Governments KFS MKWEP</i>	<i>6.0 million</i>
6	<i>Support Coordinating Organisations with office Equipment and logistics (computers and Printers)</i>	<i>8 Laptops and 2 Printers procured 4 wheel drive vehicles and fuel</i>	<i>4 years</i>	<i>KWP/MKEW P/KFS</i>	<i>50.0 million</i>
7	<i>Support Coordinating Organisations with Labour Costs</i>	<i>Engage 2 employees for 3 Partners for 4 years</i>	<i>4</i>	<i>KWP,CAPNE T & MKEWP</i>	<i>72.00 MILLION</i>

2. Improving stakeholders' engagement and coordination					
8	Support formation of County level stakeholder coordination platforms	1. Platforms formed 2. Quarterly meetings facilitated for 4 years for 6 counties 3. Governance committee meetings supported	4 years 4 years	Kenya Water partnership/ MKEWP	24.0 million
9	Facilitate establishment and operationalization of Basin Water Resources Committee to steward water allocation, management and protection	BWRC established and trained	1 year	WRA	20.0 million GoK, Donors Partners
10	Develop sub-basin level platforms for engagement with county governments.	Establishment of Platforms	4 years	WRA	6.0 million GoK, Donors Partners

11	<p>Support annual meetings with all Members of Parliament Governors to get their support for action plan</p> <p>Half yearly meetings with County Water Committees</p> <p>Annual Meeting with Cabinet Secretary and Principal Secretary in charge of Water</p>	<ul style="list-style-type: none"> To get buy in Counties need to know what is being planned for the whole basin To influence the financial allocation Support 20 WRUAs with 3 and 50% manager scouts per WRUA. 	<p>4 years</p> <p>4 years</p>	<p>KWP/MKEW P</p>	<p>20.0 million</p> <p>ENNDA, MKEWP</p> <p>20.0 million 38.0 million</p> <p>Development partners</p>
3. WATER QUALITY MANAGEMENT					
12	<p>Establish one laboratory in the lower ENNB</p>	<p>One laboratory established in Isiolo to serve the lower ENNB</p>	<p>4 years</p>	<p>WRA</p>	<p>20.0 million</p> <p>GoK Donors Partners</p>
13	<p>Build the capacity of technical staff and laboratory to analyze samples accurately and on time</p>	<p>Enhanced capacity of staff</p>	<p>Continuous</p>	<p>WRA</p>	<p>8.0 million</p> <p>GoK, Donors Partners</p>

14	Develop capacity to undertake biomonitoring to assess aquatic ecosystem health	Scientists capacitated to undertake biomonitoring, pilot sites identified and monitoring implemented, results integrated with Water Quality monitoring results	4 years	WRA	20.0 million GoK Donors Partners
4.GROUNDWATER MANAGEMENT					
15	Undertake groundwater abstraction and water quality surveys	Groundwater abstraction and water quality data	3 years	WRA	12.0 million GOK, Donors, Partners
16	Map and establish underground water Potential	Underground Water Potential established	3 years	WRS	50.0 Million G OK, Donors, Partners
5. HYDRO-METEOROLOGICAL MONITORING					

17	Engage scouts/enumerators for data collection by WRUAs supervised by WRUA managers	Data in 20 WRUAs collected and shared by all stakeholder	4 years	MKWEP	2.0 million GOK, Donors, Partners
18	Support WRUAs with laptops for data analysis and Smart phones. Support 4 CFAs with 4 Laptops (Annex 5 and 6)	20 Laptops and 40 Smart phones bought for 20 WRUAs 4 CFAs provided with 4 laptops and 12 smart phones	1 year	WRUAs, MKEWP, CFAs CETRAD, ENNDA	3.0 million Development partners
19	Installation of new and modern equipment for data collection and installation at strategic points to get more accurate and timely data	Accurate and dependable data for decision making	1-2 years	KMD, WRA, Academic institutions, ENNDA, CETRAD	10.0 million National Government, County Governments, Development partners
20	Develop policy, legal and institutional framework on data use, management and sharing	Policy developed	2 years	KMD, WRA, CETRAD, ENNDA	2.0 million National Government, County Governments, Development partners

6. Strengthen the enabling environment to support institutions

21	Hold Water Action workshops with technocrats and elected leaders to increase support Basin wide approach	6 counties leaders meeting and Resolutions adopted. Biannual meetings held	4 years	KWP/ MKEWP/ NGOS	20.0 million Development Partners
7. Improve Water Demand Management and sustainability					
22	Construct 8 common Intakes and 10 Sand dams	4 per year for 2 years and 5 in the first 2 years	2 years	MKEWP/CET RAD/ ENNDA	40.0 million 25.0 million GOK/ Development Partners
23	Support Community Water Projects with Master Meters	Community water projects provided with 20 Master Meters	2 years	MKEWP	6.0 million GOK/ Development Partners
24	Re-alignment of pipes for 80 CWP	80 CWP pipelines installed	2 years	MKEWP	6.0 million GOK/ Development Partners

25	<i>Consultancy for Design, supervision and Mileage</i>	<i>Design & Supervision</i>	<i>2 years</i>	<i>MKEWP</i>	<i>5.3 million</i> <i>GOK/ Development Partners</i>
8. Improve Water Security and Governance					
26	<i>Provide Capital to Ewaso Maji Users SACCO for Household Water Storage and Drips (Revolving Fund)</i>	<i>40 million Litres Water pans established for each of 6 Counties</i>		<i>MKEWP/EM U SACCO</i>	<i>21.0 million</i> <i>GOK/ Development Partners</i>
27	<i>Support meetings for implementing Organizations</i>	<i>12 Meetings per year for 4 years</i>	<i>4 years</i>	<i>KWP/MKEWP</i>	<i>6.0 million</i> <i>GOK/ Development Partners</i>
28	<i>Procure 2 excavators, 2 rollers for Excavation of Water pans for</i>	<i>Excavation Equipment procured</i>			<i>47.0 million</i>

	<i>farmers support</i>				<i>GOK/ Development Partners</i>
9. Protection and improvement of Catchment Areas and Water Towers					
<i>29</i>	<i>Establishment of Tree Nursery by CFA/WRUA Collaboration</i>	<i>One mega Nursery established</i>	<i>4 years</i>	<i>WRUAs/ CFA/MKEWP /KFS</i>	<i>5.0 million GOK/ Development Partners</i>
<i>30</i>	<i>Fencing/water and seeds and equipment</i>	<i>8 hectares plot fenced and indigenous seeds sown</i>	<i>6 months</i>	<i>MKEWP</i>	<i>4.8 million GOK/ Development Partners</i>
<i>31</i>	<i>Establishment of Mt Kenya Grazing capacity and restrict animal entry</i>	<i>Grazing management plans drawn and enforced</i>	<i>4 years</i>	<i>KFS/MKEWP /CFAs</i>	<i>6.0 million GOK/ Development Partners</i>
<i>32</i>	<i>Coordination meetings to plan for Forest fires management</i>	<i>Forest fires management framework in place</i>		<i>MKEWP/CFA s/KFS/KWS/ KWT</i>	<i>4.0 million GOK/Partners</i>
<i>33</i>	<i>Labour costs</i>	<i>1 supervisor and 6 workers</i>	<i>4 years</i>	<i>MKEWP</i>	<i>3.2 million</i>

10. Monitoring, Evaluation, Communication and Learning					
34	Monitor all activities to ensure timelines Capture learnings and document and communicate to all stakeholders	Quarterly and annual reports produced and shared through print media, Radio and Television	4 years	KWP/MKWE P	6.0 million GOK/ Development Partners
35	Support Coordinating Organisations with Labour Costs	Engage 2 employees for 3 Partners for 4 years	4 years	KWP,CAPNE T & MKEWP	74.1 million
GRAND TOTAL					608.8 million

6. Risks and Mitigation

One of the risks identified in the implementation of SDG 6.6.1 Action Plan is the prevailing Covid-19 pandemic which has affected and may continue impacting budgetary processes at all levels of governance. Another is the electioneering period and the forth coming general elections on 9th August 2020 may interfere with resources allocation and implementation activities. Lastly inadequate resources may interfere with planned activities. Hence, resource mobilization efforts will be stepped up to tap into available funding mechanisms.

7. Monitoring and Evaluation

Monitoring and evaluation (M&E) will be carried out to ensure that action plan implementation is on track, and to ensure that the targets and goals set out in the plan are achieved and that any challenges regarding implementation are detected early and addressed.

Kenya Water Partnership in collaboration with MKWEP and other key implementing institutions will organize quarterly project management review meetings. During these meetings the project progress will be discussed and reviewed against relevance, effectiveness, impact, efficiency and sustainability. The management review meetings will allow for improvements and project steering. The team will prepare quarterly and annual plans. Impact monitoring will be carried out after project end.

8. References

Makenzi, P., Ketiemi, P., Omondi, P., Maranga, E., & Wekesa, C. (2013). Trend analysis of climate change and its impacts on crop productivity in the lower tana river basin, kenya. *Octa Journal of Environmental Research*,

1(4), 237–248.

Rwigi, S. K. (2014). *Analysis of Potential Impacts of Climate Change and Deforestation on Surface Water Yields from the Mau Forest Complex Catchments in Kenya*. University of Nairobi.

<http://erepository.uonbi.ac.ke/handle/11295/72974?show=full>

9. Annexes

Annex 1: Participants of the Awareness Training workshop (22nd September 2021)

S/ No	NAME OF INSTITUTION	Name of expert	Expertise/ Designation/ Mandate	EMAIL
1	Ministry of Water, Sanitation and Irrigation	Andrew. M. Kinyua	Chemist	mwarekinyua@gmail.com
2	Ministry of Water, Sanitation and Irrigation- Department of Land Reclamation	Esther Musavi	DDL R	esthermusavi03@gmail.com
3	Water Resources Authority	Simon Mwangi	Team leader, Kenya Water Security & Climate Resilience Project	kwscrpwrmapiu@gmail.com
4	Kenya Water Towers Agency	Simon Odawa	Ecosystems	simon.odawa@watertowers.go.ke
5	Kenya Forest Service	Andrew Muriithi	Water Resources Management	andrewmuriithina@gmail.com
6	The National Treasury and Planning-State	Morris Kamande	Planning	morisnjoro2000@gmail.com

	Department of planning			
7	National Land Commission	Ben Opaa	Planning	benopaa@gmail.com
8	Ministry of Devolution and the ASALs	Mr. David Mirobi	Natural Resources Management	mirobi2088@gmail.com
9	National Disaster Management Unit	Mr. Thomas Shamalla	Disaster Management	bentosham@gmail.com
10	County Governments	Eng. Festus Ng'eno	Environmental & Biosystems Engineering	<u>festus.k.ngeno@gmail.com</u>
11	Center for Training and Integrated Research in ASAL Development (CETRAD)	Dr. Boniface Kiteme	Research and training	<u>cetrad@cetrad.org</u>
12	Kenya Water Institute	Beatrice Langat	Environmental Planning and Management	bchepke@gmail.com
13	Upper Tana Nairobi Water Fund	Eng. Boniface Mwaniki	Water Resources Management	<u>bm.mwaniki57@gmail.com</u>
14	Agroecological systems	Dr. Stella Simiyu	Agroecosystems	stella.wattimah@gmail.com
15	Kenya National Commission for	Dr. Jaro Arero	Environment and	<u>jarero@unesco.go.ke</u>

	UNESCO		biodiversity	
16	Kenya Water and Sanitation Civil Society Network (KEWASNET)	Susan Masila	Water and sanitation	s.masila@kiwasnet.go.ke
17	Limuru Water and Sanitation Company	Margaret Maina	Chemist	magmaina@yahoo.com
18	National Museums of Kenya	Dr. Siro Masinde	Water Resources Management	siromasinde@hotmail.com
19	Kenya Water Partnership	Erick Andola	Meteorology	andolaerick@gmail.com
20	NEMA	Cynthia Magero	Environment Research & Planning	magerocynthia@gmail.com
21	Kenya Water Partnership	Leunita Sumba	Biologist/IWRM	levnitasumba@gmail.com
22	JKUAT	Caroline Kiai	Water & Environment Eng.	kiaicaro@gmail.com
23	Kenya MCT Department	Paul Murage	Climate Scientist	muragepaul@gmail.com
24	Kenya Water Partnership	Mary Kamau	Environmentalist	mary.kamau@gmail.com
25	MWSI	Margaret Irungu	DD/Transboundary	mirungu20@gmail.com

26	KEFRI	Dr. Vincent Oeba	Research Scientist climate Change	voeba@kefri.org
27	Global Water Partnership EA	George Sanga	Regional Coordinator	george.sangagwpea.org
28	WaterCap	Dr. Jackline Ndiiri	Water Resources Management	jacklinendiiri@gmail.com

Workshop Programme/Agenda

13 August 2021, Friday		Facilitator
08:30 – 09:00	Registration and coordination	WaterCap
09:00– 9:15	Purpose and outcomes of the workshop	KWP (Dr. Sumba)
09:15– 9:30	Opening-Remarks from County Government	CECM, Water, Environment, Energy and Natural Resources (Eng. Ng'eno)
09:30– 10:15	Overview of SDGs and summary of waterreport	MOWSI (Mr. Kinyua)
10:15– 10.45	SDG 6.6.1 in Kenya – Priorities and capacitygaps	WRA (Mr. Mwangi)
10:45– 11:15	Coffee-break	
11:15– 12:00	Spatial planning for protection of freshwater ecosystems	Min. of National Land Commission (Mr. Opaa)

12:00- 12:45	"Mainstreaming Ecosystem Based Approaches into Disaster Risk Reduction and Adaptation and Climate Change Adaptation in Kenya"	County Director, Meteorological Services, KMD, Muranga (Mr. Murage)
12:45- 13:30	Lunch	
13:30- 14:00	Freshwater Ecosystem Project-Overview	GWPEA (George Sanga)
14:00- 14:45	SDG 661 Explorer Platform	UNEP (Stuart)
14:45- 15:10	Plenary discussions	WaterCap (Jackline)
15:10- 15:30	Closing- Remarks from National Government	Deputy Director, MoWSI (Mr. Kingua)
15:30- 16:00	Tea break and leave at own pleasure	

**Annex 2: Participants of Workshop on Prioritization of Freshwater Ecosystems
(27 September 2021)**

S/N	NAME OF INSTITUTION	NATURE OF INSTITUTION	EXPERT	Expertise/ Designation	Contact
1	Ministry of Water, Sanitation and Irrigation	Government	Andrew. M. Kingua	Chemist	mwarekingua@gmail.com
2	Ministry of Water, Sanitation and Irrigation	Government	Esther Musavi	Land Reclamation/ Irrigation	esthermusavi03@gmail.com
3	National Environment Management Authority	Government	Francis Inganga	Chief Research Officer	ingangasf60@yahoo.com
4	Private Consultant	Private	Francis Nkako	Private Consultant	molenkako@gmail.com
5	Friends of Ngong River/ Limuru Water and Sewerage Company	CSO/Water Service Provider	Margaret Maina	Chemist	magmaina@yahoo.com
6	Datacore	Private Sector	Simintei Ole Kooke	Hydrologist	kooke@datacore.co.ke
7	Policy Research and Institutional Development at Resilience Centre	Private Sector	Eng. Simon Thuo	Water Resources Management	simonthuo@gmail.com
8	Kenya Meteorological Department	Government	Peter Macharia	Meteorology	macharia10@yahoo.com

9	Kenya Water Partnership	NGO	Dr. Leunita Sumba	IWRM	leunitasumba@gmail.com
10	Kenya Water Partnership	NGO	Eric Andola	Meteorology	andolaeric@gmail.com
11	Kenya Water Partnership	Mary Kamau	Mary Kamau	Environment	mary.kamaah@gmail.com
12	WaterCap	NGO	Dr. Jackline Ndiiri	Water Resources Management	jacklinendiiri@gmail.com
13	KWTA	Government	Caroline Wangeci	Senior Research Officer	c.wangeci@watertower.go.ke
14	Ecosave Technologies	Private Sector	Daniel Wanjuki	Lead EIA Expert & Wastewater Expert	dwanjuki@yahoo.com
15	Ecosave Technologies	Private Sector	Elisha Shem	Wastewater Expert	shemodonch2017@gmail.com
16	Kenya Forest Service	Government	Andrew Muriithi	Watershed Management	andrewmuriithi@gmail.com

Annex 3: Action Planning Workshop, in Isiolo (16th-17th December 2021)

No	Name and Surname	Organisation	Email	Type of Actor	Gender
1.	Said Omar	Ministry of Water, Sanitation and Irrigation	smomar6@gmail.com	National Government	M
2.	Mercy Ngure	Ministry of Water Sanitation and Irrigation (Land Reclamation Department)	mngure12@gmail.com	National Government	F
3.	Dr. Lee Barasa	Water Resources Authority	leebarasa2@gmail.com	National Government	M
4.	Dr. Leunita Sumba	Kenya Water Partnership	leunitasumba@gmail.com	NGO	F
5.	Peter Macharia	Global Water Partnership Eastern Africa/ Meteorology Department	macharia10@yahoo.com	NGO/ National Government	M
6.	Simintei Kooke	DataCore/ Kenya Water Partnership	kooke@datacore.co.ke	Private Sector	M
7.	Patrick Murunga	Kenya Water Partnership/ University of Tharaka	patrickmurunga@gmail.com	Academic	M

8.	Margaret Njeri	Kenya Water Partnership	gitaumargaret021@gmail.com	NGO	F
9.	Francis Nkako	FAO	francis.nkako@fao.org	International Organisation	M
10.	Paul Lekuta	Kenya Water Towers Agency	paul.leparnat@watertowers.go.ke	National Government	M
11.	Samuel Wanjohi	NGUSISHI WRUA	info@ngusishi.org	NGO	M
12.	Peter Mathenge Mwangi	LIKII WRUA	petermwangi3200@gmail.com	NGO	M
13.	Hon Julius Kirinya	LIKII WRUA	juliuskkiriinya@gmail.com	NGO	M
14.	Peter Kioko	Kenya Forest Service Agency	peterkio@yahoo.com	National Government	M
15.	Joseph Kibaki Mwigirwa	ENNCA WRUA Forum	joemwingirwa47@gmail.com	NGO	M
16.	Stanley Kirimi	MKEWP	stanley.kirimi@laikipia.org	NGO	M
17.	David Kamau	LVIA-WASH Isiolo	dmkamau04@gmail.com	NGO	M
18.	Paul Ngubu	WRA	ngubupeter@gmail.com	National Government	M

19.	James Boru Konso	ENNDA	ewasonort14@gmail.com; aborukonso@gmail.com	National	M
20.	David Wanjohi	LAICONAR	laiconarnetwork@gmail.com	CSO	M
21.	Theophilus Kioko	Meta Meta	tkioko@metameta.nl	NGO	M
22.	Benson Lengalen	Samburu County	blengalen@gmail.com	County Government	M
23.	John Tingoi	IMPACT	oletingoi@gmail.com	NGO	M
24.	Frankline Mutuma	Prima Greens	mutumafranklinmburu@gmail.com	Private Sector	M
25.	Catherine Kendi	Meru University of Science and Technology	catekendi747@gmail.com	Academic and Research	F
26.	Wilson Kimathi	Meru County	willykim32@gmail.com	County Government	M
27.	Patrick Mutwiri	Meru County	patricksmutwiri@gmail.com	County Government	
28.	Naima Hassano	Isiolo County-Merti	naemisky33@gmail.com	County Government	F
29.	Osman Bagaja	Isiolo County	bagajaosman@yahoo.com	County Government	M

30.	<i>Steve Gichuki</i>	<i>SNV Listen</i>	<i>sgichuki@snv.org</i>	<i>International Organisation</i>	<i>M</i>
31.	<i>Margaret Kariuki</i>	<i>SNV Listen</i>		<i>International Organisation</i>	<i>F</i>
32.	<i>Josephat Lengipis</i>	<i>SNV Listen</i>		<i>International Organisation</i>	<i>M</i>
33.	<i>John Nguyo</i>	<i>Kenya Meteorological Department</i>	<i>johnnguyo67@gmail.com</i>	<i>National Government</i>	<i>M</i>
34.	<i>Ali Racho Guracha</i>	<i>Merti Integrated Development Project</i>	<i>midp2003@gmail.com</i>	<i>NGO</i>	<i>M</i>

Annex 4: Agenda**15th December 2021 Travel date**

16th December 2021, Thursday Day 1		Responsibility
8.30 am – 9.00 am	Registration	Secretariat
9.00 am – 9.20 am	<ul style="list-style-type: none"> • Opening Prayer • Introductions, Climate setting and expectations 	Dr. Leunita Sumba Executive Secretary, KWP
9.20 am – 9.40 am	<ul style="list-style-type: none"> • Welcoming Remarks • An overview of the Pilot project • Workshop Objectives and outputs 	Mr. Peter Macharia, GWPEA Chair
9.40 am – 10.20 am	<ul style="list-style-type: none"> • Remarks from the Director National Water Resources • Opening Remarks from CEO ENNDA 	MWSI CEO, ENNDA
10.20 am – 10.50 am	Health Break	Secretariat
10.50 am to 1.20 pm	Presentations <ul style="list-style-type: none"> • WRA • ENNDA • METAMETA • CETRAD • MKEWP • LAICONAR 	Dr. Lee Barasa
1.20 pm to 2.00 pm	Lunch Break	Secretariat

2.00pm to 5.00 pm	Presentations Isiolo County Samburu County MWSI (Land Reclamation Department) KFS NEMA Groupwork	Simintei Kooke Mr. Francis Nkako
Tea and End of Day 1		
17th December 2021, Friday Day 2		Responsibility
8.30 am – 9.00 am	Registration	Secretariat
9.00 am – 9.20 am	Prayer and Recap	Mr. Patrick Murunga (KWP)
9.20 am – 10.30 am	Presentation from the of Global Water Partnership	George Sanga – The Regional Coordinator Global Water Partnership
10.30 am -11.00 am	Health Break	Secretariat
11.00 am – 1.00 pm	Draft Action plan presentation and validation	Francis Nkako
1.00 pm-1.30 pm	Closing and Way forward	Mr. Peter Macharia, GWPEA Chair
1.30 pm	Lunch and departure	Secretariat

Annex 5: CFAs and Status of Participatory Forest Management Plans (PFMP)

A) LIST OF CFAs IN EWASO RIVER NORTH BASIN

	CONSERVANCY	ECOSYSTEM (COUNTY)	FOREST STATION
1.	EASTERN	Meru	a) Ontulili Forest Station
			a) Marania Forest Station
			b) Ngarendare Forest Station
			c) Nyambeene Forest Station
			d) Ngaya Forest Station
2.	CENTRAL HIGHLANDS	Nyeri	a) Muringato Forest Station
			b) Nanyuki Forest Station
			c) Gathiuru Forest Station
			d) Narumoru Forest Station
		Nyandarua	a) Ndaragwa Forest Station
			b) Olbollosat Forest Station
		Laikipia	a) Shamanek Forest Station
			b) Mukogondo Forest Station
			c) Lariak Forest Station
			d) South Marmanet Forest Station
			e) North Marmanet Forest Station
		f) Rumuruti Forest Station	
3.	EWASO NORTH	Samburu	a) Maralal Forest Station
			b) Wamba Forest Station
	c) South Horr Forest Station		
		Marsabit	a) Marsabit Forest Station

Note: Each Forest Station has a single CFA

<i>B) CFAs with valid PFMPs</i>	<i>C) CFAs that require revision of PFMPs</i>	<i>D) CFAs without PFMPs</i>
<i>Ontulili Forest Station</i>	<i>Ndaragwa Forest Station</i>	<i>Shamanek Forest Station</i>
<i>Marania Forest Station</i>	<i>Olbollosat Forest Station</i>	<i>Lariak Forest Station</i>
<i>Ngarendare Forest Station</i>	<i>Rumuruti Forest Station</i>	<i>South Marmanet Forest Station</i>
<i>Nyambeene Forest Station</i>	<i>Mukogondo Forest Station</i>	<i>North Marmanet Forest Station</i>
<i>Ngaya Forest Station</i>		<i>Wamba Forest Station</i>
<i>Muringato Forest Station</i>		<i>South Horr Forest Station</i>
<i>Nanyuki Forest Station</i>		
<i>Gathiuru Forest Station</i>		
<i>Marsabit Forest Station</i>		
<i>Maralal Forest Station</i>		

Annex 6: WRUAs and status of Sub-catchment management plans (SCAMPS)

UPPER EWASO NGIRO WRUAs

SUB BASIN UEN	WRUA NAME	SCMP DEVELOPED	SCMP REVIEW
1	Upper Ewaso Ngiro	March 2011	

2	Karemeno	January 2013	
3	Nanyuki	September 2009	
4	Ngobit	May 2011	
5	Likii	February 2009	
6	Burguret	February 2010	
7	Teleswani	July 2008	2020
8	Kurum	September 2011	
9	Loisukut	November 2017	
9	Sirimon	August 2018	
10	Rongai	May 2011	
11	Ontulili	June 2010	
12	Ngusishi	April 2008	
13	Timau	August 2010	
14	Kariguini	July 2014	
15	Segera	Not yet	
16	Kudoti	October 2017	
17	Loisukut	November 2017	

WRUAS IN MIDDLE EWASO NG'IRO SUB BASIN AREA (Established WRUAs)

S/N	WRUA NAME	SCMP STATUS	LEVEL OF FUNDING	SCMP ACTIVITIES	Inter/Intra Wrua	counties
1	NGARE NDARE	Reviewed, 2021	Level 2	See the scmp	Inter county	Isiolo, Meru and Laikipia
2	NGARE NYTHING	OBSOLETE	LEVEL 2	To be reviewed	Inter county	Isiolo and Meru
3	Isiolo	Reviewed	Level 2	As per the scmp	Inter county	Isiolo and Meru
4	Waso Mara	Reviewed	Level 2	As per scmp	Inter county	Isiolo and Meru
5	Likiundu	obsolete	Level 2	Scmp to be	Inter	Isiolo and

				<i>reviewed</i>	<i>county</i>	<i>Meru</i>
6	<i>Liliaba</i>	<i>obsolete</i>	<i>Level 2</i>	<i>Scmp to be reveiwed</i>	<i>Inter county</i>	<i>Isiolo and Meru</i>
7	<i>Ndumuru</i>	<i>obsolete</i>	<i>Level 1</i>	<i>Scmp to be reviewed</i>	<i>Inter county</i>	<i>Isiolo &Meru</i>
8	<i>Lagha Togween</i>	<i>obsolete</i>	<i>Level 1</i>	<i>Scmp to be reviewed</i>	<i>Inter county</i>	<i>Isiolo & Garissa</i>
9	<i>Ramuki</i>	<i>updated</i>	<i>Level 1</i>	<i>See the scmp</i>	<i>Inter county</i>	<i>Isiolo & Meru</i>
10	<i>Ol ndonyiro</i>	<i>obsolete</i>	<i>Level 1</i>	<i>Scmp to be reviewed</i>	<i>Intra county</i>	<i>Isiolo</i>
11	<i>Kipsing</i>	<i>obsolete</i>	<i>Level 2</i>	<i>Scmp to be reviewed</i>	<i>intra</i>	<i>Isiolo</i>
12	<i>Wamba</i>	<i>obsolte</i>	<i>Level 1</i>	<i>Scmp to be reviewed</i>	<i>intra</i>	<i>Samburu</i>
13	<i>Machini</i>	<i>updated</i>	<i>Level 1</i>	<i>See the scmp</i>	<i>intra</i>	<i>samburu</i>
14	<i>Middle Ewaso</i>	<i>obsolete</i>	<i>Level 2</i>	<i>Review scmp</i>	<i>inter</i>	<i>Isiolo & Laikipia, Samburu</i>
15	<i>Gotu</i>	<i>obsolete</i>	<i>Level 3</i>	<i>Review scmp</i>	<i>intra</i>	<i>Isiolo</i>
16	<i>Kula mawe</i>	<i>obsolete</i>	<i>Level 3</i>	<i>Review scmp</i>	<i>intra</i>	<i>Isiolo</i>
17	<i>Gallan Goff</i>	<i>obsolete</i>	<i>Level 3</i>	<i>Review scmp</i>	<i>intra</i>	<i>Isiolo</i>
18	<i>Garfassa</i>	<i>obsolete</i>	<i>Level 4</i>	<i>Review scmp</i>	<i>intra</i>	<i>ISILOLO</i>
18	<i>Omar Quri</i>	<i>obsolete</i>	<i>Level 2</i>	<i>Review scmp</i>	<i>intra</i>	<i>Isiolo</i>
19	<i>Mert</i>	<i>OBSOLETE</i>	<i>Level 3</i>	<i>Review scmp</i>	<i>intra</i>	<i>isiolo</i>
20	<i>Dhukes</i>	<i>updated</i>	<i>Level 2</i>	<i>Review scmp</i>	<i>intra</i>	<i>Isiolo</i>
21	<i>Kom yamicha</i>	<i>obsolete</i>	<i>Level 2</i>	<i>Review</i>	<i>intra</i>	<i>Isiolo</i>

				scmp		
22	KURO Bissan Owo	obsolete	Level 3	Review scmp	intra	isiolo
23	Modogashe	No scmp	Level 1	Develop a scmp	inter	Isiolo & Garissa
24	Dadhatha	No scmp	Level 1	Develop a scmp	inter	Isiolo & Garisa

POTENTIAL WRUAS IN MIDDLE EWASO NG'IRO SUB BASIN AREA

SAMBURU COUNTY	ISIOLO COUNTY
SERE OLIPI	MATASADE
MATHEWS RANGE	MALKA GALLA
KAURO	LOLOBOKE
SERA	LAGH KOMM
NANKOLIO	DOGOGICHA
LOSESIA	SOLBERAWAWA
SINKA	LAGH NYACHISA
KIP MELBAO	YAMICHA KOM
KOITENG	KURRO GARSE
LERATA	LOWER EWASO NYIRO MERTI
LARISO NAISHAMU	MADOGASHE SOUTH
LONGOPITO	YATO BISIEKA
NYANYELA KUNDU	NDERERA
	GARBATULA
	UPPER BENAN
	MUATHI BIBI
	BISANADI
	UPPER DEROGATI
	MERU NATIONAL PARK
	OLKERRDED NDUMURU
	EWASO NYIRO CHUMA
	KIROFTU

	<p>RHOBDO MADO YAA KALO KUBI JILANGO GURUFA UPPER DARAGOTE</p>
--	--

Annex 7: Photos



Mr. Peter Macharia, the Chairperson Global Water Partnership Eastern Africa welcoming the Isiolo workshop

Participants engaging in some social conversations during tea break at Barsalinga Hotel in Isiolo participants to



A brain storming session by group three members on the Key Strategic Actions (KSA 8- 10) assigned Mercy Nguire of the Ministry of Water, sanitation and Irrigation speaking on their activities in the Ewaso Ng'iro North River Basin



Joseph Kibaki of ENNCA WRUA making his presentation



Benson Lengalen of Samburu County making his presentation



Theophilus Kioko of MetaMeta making his presentation Mr. Francis Nkako, a natural resource management expert, leading participants in a guided discussion on group one's draft Key Strategic Actions (KSA 1-4)





Dr. Sumba making a presentation on the overview of Global Water Partnership



Group photo of the Ewaso Ng'iro North River Basin Stakeholders

