

MACHAKOS
COUNTY
GOVERNMENT
WATER POLICY 2018

FOREWARD

The Machakos County Water Policy of June, 2014 has been developed in line with the vision of the Governor, Dr. Alfred Mutua, enshrined in his 2013 manifesto. In essence the Policy is built on the achievements of the sector reform commenced with the new Constitution and the Vision 2030 coming in place to which the county policy is aligned. The Policy aims at spearheading fast development within the County else dubbed Maendeleo Chap Chap. In this the County aims at providing free safe drinking water for all as well as boosting and creating an enabling environment for precision farming by developing irrigation water structures.

The country lies within two major water towers; Tana & Athi Catchment Areas, which is faced with severe degradation due to human activities. Without its protection and conservation, the ecosystem services and water security in the County would worsen having a negative effect on the economic development and the living conditions of its population.

The county Government of Machakos is committed to ensuring the realization of the constitutional requirement to 'the right to water' which is not easy to achieve unless concerted efforts. Nevertheless, through this policy and the collective commitment of water sector stakeholders, the County Government is determined to meet its obligations. This policy also takes into account obligations of the County with regard to regional and international arrangements related to water resources management and environment, such as trans-boundary or shared water sources Framework.

Hence the Department responsible for water affairs in collaboration with its stakeholders, development partners and local communities shall ensure that the policy objectives and the guiding principles outlined in this policy and subsequent specific and detailed strategies based on it are fully implemented, monitored and evaluated for optimal impact.

We are grateful to the organization and individuals who contributed to the development of this policy, especially my staff, environment officers, the private sector, and many individual citizens of Machakos County.

It is therefore my considered expectation that this policy will serve this county as envisaged. I would like to encourage all water sector stakeholders, development partners and communities in Machakos County to work in harmony for the realization of this policy towards the driving motto of '**water for all**'.

Hon. Ruth Mutua

County Executive for Agriculture, Livestock, Fisheries, Water & Irrigation

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CHAPTER ONE

1 INTRODUCTION AND BACKGROUND

Water is a scarce natural resource, but fundamental to human and animal life, livelihoods systems, food security and sustainable development. This is articulated in the Kenyan Constitution Article 43¹ which places water as a human right for the citizens' of Kenya.

The constitution further devolved water services to the County thus transferring the responsibility of ensuring safe, clean and adequate water supply is provided by the county governments. Even though the County is endowed with different water sources that include rivers, springs and underground aquifers, there are challenges in water provision. The area receives approximately 600 mm of rainfall annually. However, the spatial temporal distribution of rainfall is not uniform, and some areas receive an annual rainfall of less than 400 mm.

The population of the County is about 1.26 million and out of these, approximately 350,000 people are within the water service area, representing 27.8 per cent of the population. The County therefore seeks to improve access to clean drinking water through drilling boreholes and powering them with solar, to minimize on the running cost. This will make it possible for the County to provide free drinking water especially to the poor in the rural areas.

Due to low awareness about the water scarcity and its economic value there is mismanagement, waste and inefficient usage of water among the various users. In addition, pollution caused by both human and industrial activities makes the provision of clean water a challenge. Furthermore, the increasing population and rising needs pose additional constraints presently and the future provision of water resource against the effects of climate change. There is more strain on the future use of water and reasonable likelihood of conflicts in water utilization among different user groups within the county, coupled with the possible competing trans-county water supply and usage.

The Machakos County Water Policy is informed by the existing challenges in water resource use and availability, and the Constitution which devolves water services to the County governments. Thus the policy recognizes the rights of citizens to water, the country's economic blueprint of Vision 2030 and the aspirations of the UN Sustainable Development Goals (SDGs). The development process has been consultative, directly involving various stakeholders in the County.

Therefore, the aspirations of various groups such as leaders, farmers, industries, County domestic water users and environmental groups are addressed in many respects within the document. The proposed policy options and defining relevant institutions are meant to guide improved water and water use in the

County.

1.1 Policy Goal and Objectives:

The policy goal is to guide efficient supply and utilization of water as a commodity and natural resource for sustainable development in the County.

The water policy focuses on the following Policy Objectives:

- a) To achieve sustainable water availability for all purposes for attainment of cultural and socio-economic development aspirations within the County.
- b) To ensure equitable supply of quality water in adequate amount to all water consumers.
- c) To improve the water services coverage to water users in the County.
- d) To provide guidance to sustainable provision of water services for domestic, industrial and agricultural purposes to ensure the conservation of environment and combat effects of climatic change for sustainable development.
- e) To align water institutional structure with the devolved functions in water provision at the County.

CHAPTER TWO

CHALLENGES AND POLICIES

2 WATER SOURCES AND SUPPLY

Water production and supply is a key determinant for the economic and social development in the County. Thus County development is negatively affected when there is declining water availability. Some of the reasons for such decline are the destruction of water towers due to encroachment, deforestation and poor management of the existing water resources. Further, lack of water storage and flood control is known to influence water flows. These cumulatively slow industrial production, agricultural output and domestic activities.

2.1 Water Sources

Water sources are the points where water originates for consumption, use, flow or distribution. These include rivers, streams, wetlands, springs, ground water, and rainwater sources. In the County the diverse sources are diminishing and vulnerable to pollution and degradation. The ground water levels

especially in areas being over-exploited could be falling thus presenting future challenges in meeting water needs. The use of improved technologies for extraction and distribution could be one of the efficient ways to address such water source challenges.

Towards this end the County government shall ensure that development plans incorporate rainwater harvesting systems and protection of water catchment areas from destruction and degradation. Additionally, possible ground water sources such as aquifers shall be mapped out to determine the quantity and quality of ground water resources in the country. This process shall be participatory involving the local communities in areas with these water resources.

2.2 Water Supply

The average portable water access in the County is between 40 per cent and 51 per cent which is divided between the rural and urban users. At present the County enjoys 18 hours per day of water supply within the serviced areas. However, the majority of urban and rural domestic water supplies rely on surface water, groundwater and rainwater. This results into inconsistencies and disparities in the water supply between different parts of the County and among the users. Further trends in water availability and supply are closely linked to the level of infrastructure development in the County, rainfall patterns and the economic activities undertaken. But with increasing population, rapid urbanization and the need for more industries increasing the demand and consequently supply needs,

the current water supply system is limited in meeting the growing demand.

Therefore, beyond reliance on surface and rain water supply, the County shall augment these natural means and include strategic supply facilities. In sub-counties where alternate water supplies are available such as spring-water, such water sources will be promoted and protected, while giving preference to domestic water supply. In collaboration with relevant stakeholders, the County shall collect and publish water accounts and water audit reports indicating water sources, leakages and pilferage for correction to ensure smooth water supply.

2.3 Water Service Providers

Water service providers will be licensed by the county department in-charge of water services.

2.4 SAFE WATER USAGE

Safe and clean water is needed for domestic, agricultural, hydro-power, thermal power and recreation. Yet the utilization in all these areas could be skewed thus low optimization and short in meeting increasing water demand among the users. This is partly due to limited awareness of water as a vital economic

resource that should be used efficiently. The demographic division of water use in the County is divided between urban and rural communities. Urban uses involve both domestic and industrial economic activities, while agriculture and household usage is dominant among the rural and peri-urban dwellers. The rising population and increased need for diversified economic uses like more industries demand requires remedial measures to address such usage in the County.

In order to address the above challenges, the County Government shall seek more investment in the water sector including partnering with development agencies and through Public-Private-Partnership (PPP) to develop more water facilities. For recreational purpose, rivers, dams and other water bodies should be considered for development for sporting and tourism activities.

2.4.1 Water Quality and Quantity

Though the current water quantity is perceived to be adequate given the existing natural sources, competing uses raises public health challenges in the quality of waters available. Currently, about 89 per cent of water quality has residue chlorine and the conformity to set bacteriological standards at 97 per cent. The possible factors which may compromise the water quality include silting, use of agricultural chemicals like pesticides and fertilizer, industrial processing and poor water treatment. Therefore, the current urban water supply and sewage treatment systems should be reevaluated to ensure that good water quality is attained and maintained. The guaranteed right to safe water thus requires for minimum standards for all and consequently necessary regulations on water quality. In order to achieve this policy objective, the County government shall, identify water pollution sources and put in place proper mechanisms to protect water sources from possible pollutants, ensure water extension education and awareness creation on water quality, and provide adequate funding for water treatment inputs such as chemicals, laboratory reagents and necessary equipment. It shall ensure and maintain the existing water quantity through Memorandum of Understanding (MoUs) with other counties for joint management and the design of local incentives for water sources protection. In addition, the County shall ensure that drinking water conforms to water quality standards as set by relevant national institutions in Kenya.

2.4.2 Waste Water Disposal

The categories of waste water emanate from domestic water, industrial effluent, garages and storm water. Between 60-70 per cent of domestic water supplied in urban areas goes to sewerage system as waste water. Besides that, upcoming urban centers, learning institutions, health facilities, markets and rural settlements in the County lack adequate waste water disposal systems.

In view of the waste disposal challenges, the County Government shall ensure that efficient waste water disposal measures are incorporated in urban and rural settlement planning. This will include development of sewerage systems, open channels, septic tanks, soak pits, latrines and eco-san systems where applicable. Further, a financial budget shall be put in place by the County Government as a mitigation measure so as to establish suitable disposal systems which are normally treated as less important; while industries shall be encouraged to treat their water affluent to the required standards before releasing their waste back to the hydrologic system.

2.5 WATER INVESTMENTS

High cost of operating water systems such as electricity and water treatment chemicals have resulted in delays and at times complete stalling of water investments. The topography of the County also discourages the development of gravity schemes that would otherwise save on the use of electricity. The unit operating costs of water is about Kshs. 93 per cubic meter of water billed, while the operation and maintenance cost in coverage area is about Kshs.105. The unchecked settlements and poor farming practices compromise the quality of water leading to high cost of treatment. Since water is a public good and a non-profit making venture the sector does not attract many private investors. Thus water investment is usually between County government and development partners. This leaves out other important private institutions that could invest and in turn benefit from certain aspects of the county water system. The County Government needs to explore alternative and cheap methods/technology for water abstraction. This could include the use of solar energy, wind power among other measures. In order for the County Government to mitigate the effects of low investment coupled with the non-attractive provision of water business/services by introducing incentives for the private sector players within the Public Private Sector framework in water services provision.

2.5.1 Water Infrastructure and Distribution

The state of water infrastructure facilities affects the supply and quality of water. For illustration broken pipes allows for unwanted particles to seep into the water supply system. Therefore, water infrastructure which include the structures used in water development, management and supply are key in ensuring that clean and safe water is delivered to water users. Some of the necessary infrastructures include intakes, treatment plants, storages tanks and pipelines. At the moment the county's water infrastructure like pipes and tanks are not the most efficient for service delivery. Furthermore, most of these facilities are concentrated in urban areas leaving the rural areas underserved. Equally the existing facilities require regular checks since they currently not well maintained. This results in loss of water and valuable

investments opportunities.

To expand the infrastructure coverage and service larger parts of the county, the government shall rehabilitate existing water works, ensure equitable distribution of water infrastructure to include uncovered areas of the county, allocate adequate financial investment for rural water supplies and ensure that standards for water works are set and monitored for compliance.

2.5.2 Water Technology

Water technology refers to the means by which water development, distribution and supply are undertaken in a cost effective and environmentally sustainable manner. Presently most of the water supplies in the County use grid power but this is not a cost effective means to distribute water resulting into high water supply expenditure. There are also limitations on the range of water harvesting technologies by the residents of the County.

To improve the level of technology for the water sector, the County shall gradually phase out the grid supply pumping systems to other options like solar system, promote use of gravity systems for large scale water supplies, and use solar power systems for small schemes; in addition to research on appropriate water technology applicable to the County. The use, promotion and adoption of indigenous knowledge for sustainable water harvesting and use shall be explored and promoted. The adoption of innovative and best practice technologies in water production and supply will be incorporated in all the County sector strategies.

2.5.3 Water Use Charges and Tariffs

The water tariffs and water use charges are varied and determined by many factors which includes cost of production/operations, and subject to Water Services Regulatory Board (WASREB)³ approval. Currently in the County the average tariff is about Kshs 98 per cubic meter of water. Tariffs are meant towards sustainability of the water supply operations hence should reflect changes in the water needs. The serviced populations are not regularly paying their water bills hence irregular revenue streams. Yet disconnection for nonpayment reduces access to quality portable water within the area of supply which is not desirable.

Equitable access to water for all and its fair pricing, for drinking and other uses such as sanitation, agricultural and industrial use should be arrived at after wide consultation with all stakeholders. Therefore, pricing of water thus should ensure its efficient use and reward water conservation.

In regard to this the County Government shall embrace low cost water production technology to ease the overall cost hence and corresponding affordable tariff. To

confer the benefits of economies of scale the County shall encourage clustering of various water schemes to cushion the consumer against high tariffs.

The County shall also ensure that all water consumers are metered to regulate possible misuse and reduce Unaccounted for Water (UFW). As a public good it shall identify and subsidize certain cost elements for example water treatment to reduce the cost of unit sales. The use of economical water treatment chemicals such as coagulant and polymers shall be adopted. But the operation and maintenance tools and equipment shall be provided by the county for all water schemes. The statutory charges by Water Resources Management Authority (WRMA)⁴ and National Environment Management Authority (NEMA)⁵ shall be reviewed and harmonized to reduce overall cost of production.

2.6 AGRICULTURAL AND INDUSTRIAL WATER

Water is required for domestic, agricultural, hydro-power, thermal power, navigation, recreation etc. The utilization in all these diverse uses of water should be optimized and an awareness of water as a scarce resource should be fostered. The County Government of Machakos is food insecure because of its high population. Due to global climate change and depleted water sources, conflict of water usage is envisaged. Agricultural production is also a viable means of addressing the unemployment in the County and yet this puts pressure on water demand.

Under irrigation water saving methods like aligning the cropping pattern with natural water sources, small irrigation (drip, sprinkler, etc.), efficient irrigation operation should be encouraged and incentivized. The County shall create awareness and introduce irrigated agriculture, production by green houses with minimal use of water so as curb food insecurity. In addition, where necessary PPP's participation shall be encouraged.

2.6.1 Riparian areas and uncontrolled settlements

Encroachment of riparian reserves by communities due to land pressure, lack of law enforcement and weak existing legislations has highly contributed to the adversity of the problem. There is an increasing informal settlement especially in peri-urban areas with unplanned infrastructure making it difficult to effectively serve such areas.

Urban settlements, encroachments and any developmental activities in the protected upstream areas of reservoirs/water bodies, key aquifer recharge areas that pose a potential threat of contamination, pollution, reduced recharge and those that endanger wild and human life should

be strictly regulated. Encroachments and diversion of water sources (like rivers, lakes, tanks, ponds, etcetera) and drainage channels (irrigated area as well as urban area drainage) shall be discouraged. In order to address the above problem, the County Government shall identify, survey and demarcate all water riparian and catchment areas. It shall pass the necessary legislation on such unsustainable settlement practices that impact negatively the water systems. The Government shall also encourage farmers to employ acceptable farming practices and legislate the law to guide on proper settlements and farming methods in the vulnerable areas. The communities shall be sensitized and encouraged to utilize water taking into account local availability of water resource and the negative effects of degrading water rich areas.

2.6.2 FLOOD CONTROL

Flood control is the method(s) used to reduce or prevent the negative effects of flood waters. Such incidences of flooding occur in the County especially parts of Matungulu and Kangundo Sub counties.

While every effort should be made to avert water related disasters like floods and droughts, through structural and nonstructural measures, emphasis should be on preparedness for flood and drought with coping mechanisms as an option. The situation is aggravated by storm water from urban centers carrying a lot of pollutants that affect water quality into natural water sources. Flood forecasting is important as a disaster management strategy for flood preparedness and should be incorporated and expanded across the susceptible part of the country. In addition, using real time data systems and better forecasting models should be adopted. Efforts should be towards developing clear models for the river basins, and linked to overall disaster mechanism in the county.

In this regard the County government shall endeavor to mitigate the adverse effects of floods in the County, Construct dams to harvest flood water; Put in place measures to control storm water and improve on existing measures to ensure protection of water sources. To increase preparedness for sudden and unexpected flood related disasters, data on river water levels and possible environment inversions such as unusual rain shall be collected in collaboration with relevant national institutions and disseminated to county residents and periodic updating of emergency action plans and water disaster management strategies shall be put in place. Further dam/embankment breaks shall be constructed in consultation with relevant communities in preparation for possible floods.

2.7 LEGAL AND INSTITUTIONAL FRAMEWORK

The Constitution in Schedule Four devolves water services to the County governments. However, weak linkages with existing County legal and institutional framework can disrupt the smooth transition of the devolved roles. The functions devolved include water service provision and sanitation, spring protection and development of small community water supply facilities. This poses a challenge since the services delivery is divided between the Community, Water Services Boards (WSBs) and the County. Some of the key issues identified in the devolved responsibilities include definition of public investments and County public works. In addition, the synergy between the existing water services boards and County water functions require examination to avoid duplication, replication and conflict of institutional roles, functions and water conservation and management mandates. The water sector has been guided by the National Water Policy of 1999 and Water Act 2002 that provided for a new institutional set-up for Water Resources Management and Water Services Boards at National and Basin level. The framework established urban Water Supplies Water Services Regulatory Board (WSRB), at the national level, while water asset developer and manager was created at the regional level with contracted water services providers to be operators for the provision of water services. Further a pro-poor basket was established to channel funds for pro-poor-related investments, to give national concepts and to offer capacity building for policy implementers. For participation and empowerment of users/consumers, the Water Resource User Associations (WRUAs) were established. This ensured stakeholder awareness and participation thus resolving water conflicts in a more amicable manner. In addition, Water Services Boards (WSBs) were established to promote Asset Development which includes Ministry of Water and Irrigation, WASREB, Water Resources Authority (WRA), Water Appeals Board (WAB), Water Services Trust Fund (WSTF), Kenya Water Institute (KEWI) and National Water Conservation and Pipeline Cooperation (NWCPC) to promote Asset Development. The establishment of such autonomous water services institutions enhanced the performance and standards in water the sector, improved information and monitoring systems, service quality and fostered transparency and accountability in water resources. This was supported by embracing best practices of separating regulatory mandates from implementation functions in order to avoid impaired accountability resulting from self-regulation. The County shall set mechanisms to deliberate on the issues relating to water, water use and water quality through local consensus and co-operation among the stakeholders. In this

regard a permanent Water Disputes Tribunal (WDT) shall be established by the Minister in charge of water affairs in the county Define “Centre”. County water head office to resolve any possible disputes. The County Water Act shall legislate on the formation of such dispute resolution mechanism.

2.8 Role of Water Resource Management

An Integrated Water Resources Management (IWRM) taking the sub County as the key/basic/primary unit should be the main principle for planning, development and management of water resources. This is to ensure that per capita water availability increase to the International benchmark of 1000 m³. The role of water institutions at the County and Sub-county level should be defined to include;

- ✍ Ensure progressive restoration and protection of ecological systems and biodiversity in strategic water catchments
- ✍ Maximize the use of Trans-Boundary Water Resources in coordination with other riparian countries and counties
- ✍ Enhance storm water management and rainwater harvesting
- ✍ Enhance inter-basin water transfer in Kenya as a strategic intervention for optimized use of water resources
- ✍ Enhance pollution control
- ✍ Establish sound appropriate research and development in the water sector
- ✍ Enhanced enforcement of regulation and other IWRM actions
- ✍ Improve effluent waters treatment and recycle for use
- ✍ Ensure sustainable groundwater resources for present and future generations
- ✍ Sufficient funds for sustainable Development and Management of Water Resources
- ✍ Resolve conflicting mandates by better cross-sectoral coordination.
- ✍ Develop a Water Management system which contributes to the protection of the environment

The County Government in liaison with WRA shall put in place a comprehensive water framework to promote sustainable and equitable development and use of water resources.

Appropriate institutional arrangements at the County Headquarters and in each Sub-County shall be developed for water services like monitoring water quality in both surface and

ground waters conservation and efficient utilization of water among other defined roles.

2.8.1 Water Service Trust Fund

The Institution gives support to local communities to develop small community water schemes in the country while addressing the pro-poor policy. In this regard, the County shall liaise with the Water Service Trust Fund to continue supporting the vulnerable community groups within the County. The County shall also establish an additional funding mechanism to support the devolved roles within the water pro-poor water framework.

2.8.2 Public and Private Institutions

Private and public institutions interested in development of water facilities either for themselves or for communities shall do so in liaison with the County Water Department in order to avoid duplication and replication of projects, capture data on water facilities within the County and assist in Planning and asset development within the County.

2.8.3 Water Appeal Board

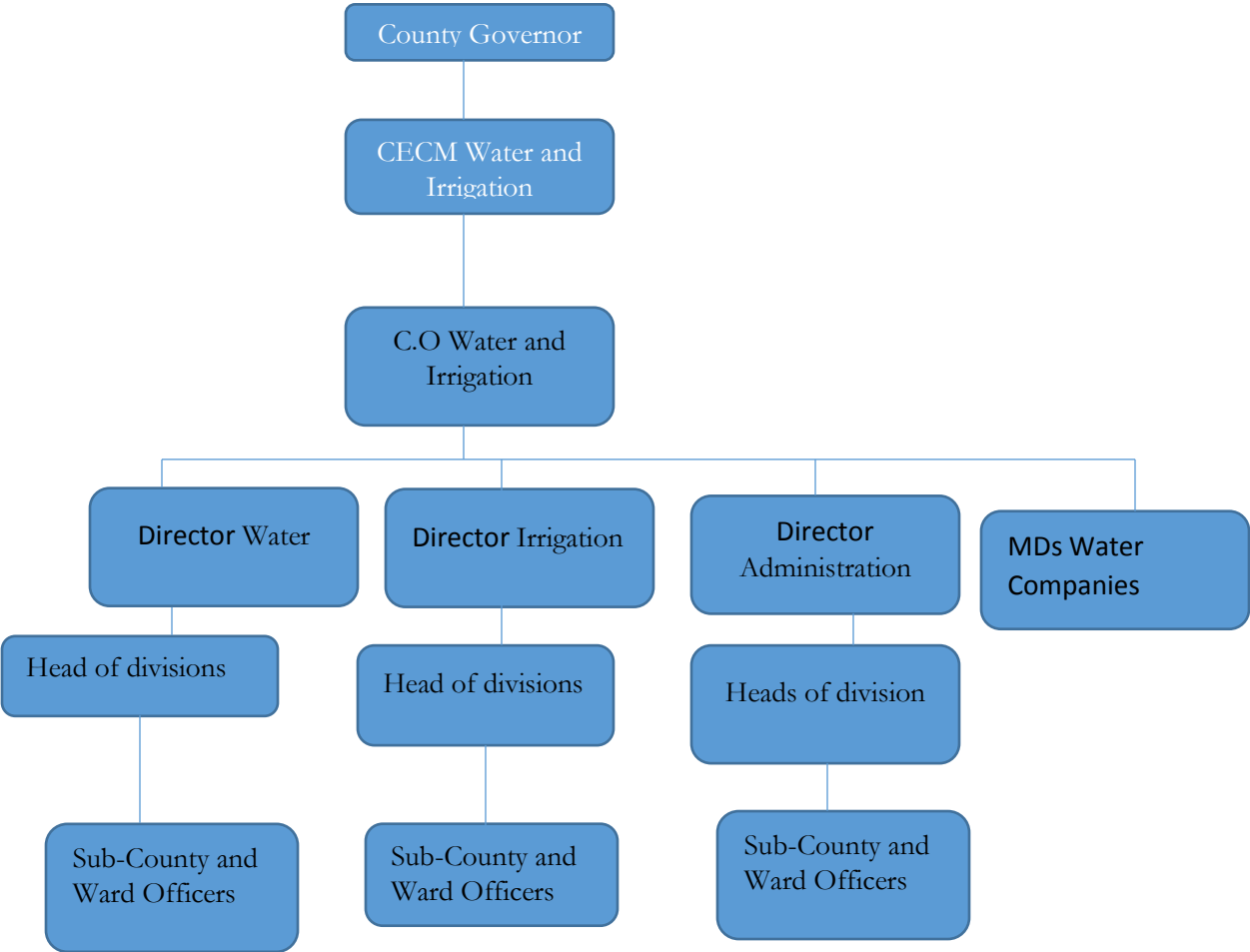
This is an institution established pursuant to section 84 of the Water Act, 2002 to arbitrate parties who are aggrieved on use of water matters. In order to resolve issues pertaining to water use conflict while using internal and new county structures the County shall make reference to the Water Appeals Board in case there is lack of consensus at the county level.

2.8.4 Institutional Arrangement

The need for technical knowledge demands that workers with requisite skills are retained by the counties. However, the secondment process of national staff to the County government process has not been fully completed. To address these challenges, a review of the legal and institutional framework of the County water structure and related instruments in the sector will be undertaken. Further the County shall establish a fully-fledged Department to oversee and ensure continuity of service to its citizens and new infrastructure development. An officers on secondment shall be part of the established county water department. The

department shall be established with the following structure.

DEPARTMENT ORGANOGRAM



2.9 Gender

Water has many gender dimensions. At the household level women and children are involved in various ways in getting and using water. Such skewed distribution of roles betrays existing laws on gender parity. But traditionally, women work on farm and household roles and thus access to water affect their production activities. To address this gap, an effective gender-sensitive approach in designing and implementing various interventions in water development shall be undertaken.

In this regard the County government in collaboration with stakeholders in both public and private sectors, will develop special gender sensitive programmes for women and youth empowerment to enable them access efficient water facilities. The relevant gender issues will be incorporated, as much as possible, in all water extension education.

3 Monitoring and Evaluation (M&E)

Prudent water resource management is required to realize the objectives of this policy. As such, instituting an effective mechanism for monitoring the resource use, which will be possible through the development of a well-coordinated information management system that provides for information sharing among stakeholders. Towards this goal, the County will ensure efficient management of financial resources in the water department through ensuring strict adherence to various budget rationalization schemes as well as following the laid down public finance management procedures and regulations.

An appropriate participatory M&E system will be established in order to ensure that the necessary corrective measures are taken at the right time during the implementation of projects and programmes in the sub-sector. The County government will also work closely with all stakeholders to evaluate the performance of the activities undertaken by the different stakeholders.