



REPUBLIC OF KENYA



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# HYDROLOGISTS REGISTRATION BOARD

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## STRATEGIC PLAN

**2022-2026**

*MOTTO: ENHANCING PROFESSIONALISM IN HYDROLOGY*

**FINAL DRAFT**

**JUNE, 2022**





## **VISION**

A quality and robust hydrological practice and management.

## **MISSION**

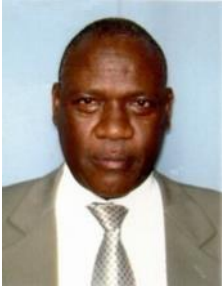
To promote good governance in regulation, oversight and coordination of the practice of Hydrology.

## **OUR CORE VALUES**

The Hydrologists Registration Board will be guided by the National Values as espoused by the Constitution of Kenya, 2010. These are:

- a. Sustainable Development
- b. Honesty and Integrity
- c. Human Dignity
- d. Teamwork and Focus on Results
- e. Innovation
- f. Participatory Approach

## FOREWORD



The Hydrologists Registration Board is a Regulatory State Corporation formed under the Hydrologists Act No 19 of 2017. The Board was established via Kenya Gazette Notice No. 6466-8 in Vol. CXXI No. 90 of 19<sup>th</sup> July, 2019 and was formally inaugurated on 5<sup>th</sup> December, 2019. The institution falls under the Ministry of Water, Sanitation and Irrigation.

The functions of the Board according to the Act are to regulate, coordinate and oversee the practice of hydrology; to promote standards of professional competence and practice amongst hydrologists; to coordinate research, investigations and surveys in the hydrological field; to recognize institutions that furnish a sufficient guarantee of academic knowledge of practical experience in hydrology; to demand and certify hydrological studies and reports necessary for the design of hydraulic structures; to collaborate with other bodies or organizations in development of programs and facilities for the advancement of hydrology and well-being of hydrologists; and to perform any other function that is incidental or consequential to its functions under this Act any other written law.

The Board is committed to ensuring the right to water as stipulated in Article 43(1)(d) and Article 69 (1) of the Constitution of Kenya as well as promoting access to adequate and sustainable water resources to all. This will be attained by ensuring professional hydrological services are available for the development of hydrological reports, undertaking of hydrological investigations and studies, design of hydraulic structures, and the implementation of water, road and related projects and programs.

The process of developing this Strategic Plan has involved key stakeholders. A Technical Working Group was constituted to develop the Strategic Plan, from the zero draft to this current document. This Strategic Plan has been prepared through a consultative process that involved a wide range of stakeholders from within and outside of the Water Sector, whose critical reviews have as much as possible been incorporated. Engagement with stakeholders will be strengthened in future through policy, strategy and institutional development, sustainable financing models, adequate planning, monitoring and review as well as capacity development.

This Strategic Plan will provide policy direction for the Board for the next five (5) years.

**JULIUS G.M. MUTUARUCHIU, HSC**  
**CHAIRPERSON**  
**HYDROLOGISTS REGISTRATION BOARD**

## PREFACE



According to the Constitution of Kenya, 2010 it is the right of all citizens to have access to clean water, in adequate quantities and with reasonable standards of sanitation. In light of this, it is imperative that all stakeholders involved in the planning, development and conservation of water resources work jointly and individually towards the achievement of universal access to water and sanitation.

This Strategic Plan sets out the policies, programs and activities that the Hydrologists Registration Board will be implementing and undertaking during the period 2022-2026 to support the progressive realization of the right to adequate and sustainable water resources for all Kenyans, and the attainment of the Sustainable Development Goal (SDG) No. 6 and the National Development Goals. This will be done through the registration and licensing of hydrologists to provide professional services in hydrological research, analyses, surveys and investigations.

The Board will in the next five (5) years place great emphasis on the full operationalization of the Hydrologists Act, 2017 and Hydrologists Regulations, 2022 in the development of policies, standards and procedure manuals, in enhancing professional competence amongst hydrologists, and in promoting research in hydrological services. The Board will further ensure the certification of hydrological studies necessary for the design of hydraulic structures and will actively seek collaborations and partnerships in human capacity development and in resource mobilization. Over and above these objectives, the Board will develop an inventory of hydrology professionals in the country and will aim at licensing at least one thousand (1000) of them. It shall also remain an objective of the Board to provide necessary support to the Executive Board, Board Committees, Registrar/CEO's office, and to facilitate liaison with academic and technical institutions, professional and regulatory bodies and all other key stakeholders among other objectives.

It is my great pleasure to acknowledge the invaluable contribution from our stakeholders. First and foremost, I wish to thank the leadership and the staff of the Ministry of Water, Sanitation and Irrigation, led by the **Principal Secretary**, and to the Planning Department led by the Director - Planning, who played a key role in providing guidance and direction in the development of the Plan. My sincere gratitude goes also to other Government Ministries, Departments and Agencies and Water Sector Institutions for their input. Special thanks to the Technical Working Group that prepared the initial draft and developed it to this final Plan.

I appreciate greatly the role played by the Board's Strategy and Technical Committee who provided great insight and guidance in ensuring that this Strategic Plan has conformed to the Ministry of Planning guidelines on preparation of Strategic Plans. Last but not least, I wish to direct my heartfelt gratitude to the Board of Directors for offering strategic direction during the preparation of this Strategic Plan.

I wish to reiterate my commitment to meeting and implementing the annual targets, in tandem with the Board's Annual Performance Contract and Work Plans. It is my hope that all key stakeholders will adopt this plan in their activities, projects and programs so as to improve service delivery to the Citizens of the Republic of Kenya.

**ANTONY K.G. MWENJE**  
**REGISTRAR/CHIEF EXECUTIVE OFFICER**

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## ABBREVIATIONS AND ACRONYMS

ASALs	Arid and Semi-Arid Lands
CBOs	Community Based Organisations
CEO	Chief Executive Officer
CFO	Chief Finance Officer
COK	Constitution of Kenya
HSK	Hydrological Society of Kenya
HR	Human Resources
HRB	Hydrologists Registration Board
ICT	Information Communication Technology
KRA	Key Result Area
M&E	Monitoring and Evaluation
MoUs	Memorandum of Understanding
MTEF	Medium Term Expenditure Framework
MTP III	Third Medium Term Plan of Kenya’s Vision 2030
MWSI	Ministry of Water, Sanitation and Irrigation
NGOs	Non-Governmental Organisations
NWMP	National Water Master Plan
PESTEL	Political, Economic, Socio-cultural, Technological, Environmental and Legal Analysis
PPPs	Public-Private Partnerships
SDGs	Sustainable Development Goals
SOPs	Standard Operating
SWOT	Strengths, Weaknesses, Opportunities and Threats
WRA	Water Resources Authority
WRMA	Water Resources Management Authority

## EXECUTIVE SUMMARY

The Hydrologists Registration Board is a Regulatory State Corporation formed under the Hydrologists Act No 19 of 2017. The Board was established vide Kenya Gazette Notice No. 6466 - 6468 in Vol. CXXI No. 90 dated 19<sup>th</sup> July, 2019. The Board, which falls under the Ministry of Water, Sanitation and Irrigation (MWSI), was formally inaugurated on 5<sup>th</sup> December, 2019.

This Strategic Plan 2022-2026 is the first to be developed by the Board. The Plan charts the Board's future by presenting the key milestones that the Board intends to achieve in the next five years and the strategies that it intends to employ in so doing. Preparation of the Strategic Plan has been guided by the Constitution of Kenya 2010, Water Act 2016, Hydrologists Act, 2017, Kenya Vision 2030, Third Medium-Term Plan (MTEP III) 2018-2022, the 'Big Four' Agenda, Sustainable Development Goals, and Africa Union's Agenda 2063.

The water sector in Kenya faces significant challenges, which include: limited water resources, climate change, catchment degradation, rapid population growth and poverty, competition for available water resources, water pollution, poorly designed water infrastructure, unsustainable water projects, mis-management of transboundary waters, and inadequate data for use in planning and decision-making. Hydrologists are, owing to the nature of their profession and training, well-placed to provide solutions and advice towards the handling of these challenges. This Strategic Plan 2022-2026 intends to provide solutions to some of these challenges.

Kenya's per capita fresh water potential is estimated to be approximately 527m<sup>3</sup> (NWMP, 2030), which is well below the United Nations standard of above 1000m<sup>3</sup> for countries not considered to be under water stress. Kenya is therefore considered as a water-scarce country, with the situation being exacerbated during low-rainfall and drought periods when high water demand against low water availability creates tension, competition and conflicts. As the Ministry and the general populace addresses this challenge through construction of water diversion, storage and supply infrastructure, this Plan will ensure that design of such infrastructure is done by well-trained, certified and licensed hydrologists.

It is expected that the major limiting factors to the implementation of this Strategic Plan will be related to inadequate funds, lack of awareness, resistance to change, lack of capacity amongst hydrologists, slow pace of enforcement of regulations, impacts of increased pressure on available water resources, climate change and reducing and unreliable rainfall, and unethical practises in the development of water infrastructure.

However, the Board intends to learn from any challenges encountered and will use this experience in developing sustainable solutions. This Strategic Plan will provide for sound strategies for forging cooperation, partnerships and collaborations among stakeholders, and for resource mobilization.

Stakeholder participation is a key component of any planning process. The Board has taken cognizance of this fact by ensuring that there was adequate stakeholder participation in the preparation of the Strategic Plan. The stakeholders involved in the planning and implementation of this Plan have been identified as being the general public, MWSI officials, Water Sector Institutions, Board management staff, research and academic institutions, government Ministries, Departments and Agencies, County governments, professional organizations, the National Assembly and the Senate, the media and the Board's contractors and suppliers.

In the implementation of this Strategic Plan, the Board will be guided by the principles of integrated resource management, integrated planning, respect for human rights, equity, inclusion, professionalism, efficiency, collaboration, public participation and consumer protection.

The overall goal of the implementation of this Strategic Plan will be by injecting professionalism in the investigation, survey and analysis of water resources and catchments, and in the design of hydraulic infrastructure so as to increase sustainability of water resources, programs and projects and accelerate access to water availability. In so doing, the Plan will have six (6 no.) key result areas namely: Regulation, Coordination and Overseeing the Practice of Hydrology; Standards of Professional Competence; Research in Hydrological Services; Certification of Hydrological Studies for Design of Hydrological Structures; Partnership and Resource Mobilization; and Human Resource Capacity.

The Board recognizes that for this Strategic Plan to be implemented successfully, there must be adequate human, technical and financial resources. The Board currently has only 1 (one no.) permanent staff member and ten (10 no.) other staff who are deployed temporarily from the Ministry, against an authorized establishment of seventy-seven (77 no.) officers who are required for this Strategic Plan to be fully implemented. Unless addressed immediately, this deficit is likely to pose a major challenge in the implementation of the Plan.

In terms of funding, the Board will require Ksh. 529,800.0 Million to implement this Strategic Plan. Out of this, Ksh. 161.0 Million is projected as the allocation by the Government of Kenya (GoK) and Ksh. 368,800.0 Million is expected to be raised from A-in-A and from development partners.

To maximize on the utilization of the available resources, the Board will enhance transparency and accountability in regulation of the hydrology profession, in undertaking hydrological designs, analysis, studies, investigations and assessments; and in planning, implementation, monitoring and evaluation of projects and programs as well as adopting preventive maintenance and use of technology.

The Board will seek to mitigate risks in the implementation of this Strategic Plan by establishing a Risk Monitoring System consisting of a Risk Management Policy, a Risk Management Committee and Risk Management Coordinators. This Risk Monitoring System will be developed so as to assist in identifying risks, as well as determining and implementing risk management measures.

Monitoring, evaluation and reporting of the implementation are key components of this Strategic Plan. The Board will adopt an innovative monitoring, evaluation and reporting framework, based on a common framework of indicators and methodologies. A monitoring and evaluation team will be formed which will receive and analyse progress reports from each directorate and department.

# CHAPTER ONE: INTRODUCTION

## Overview

This Chapter focuses on background information of the Hydrologists Registration Board and highlights its mandate according to the Hydrologists Act No.19 of 2017. Also highlighted are the Global, Regional and National challenges that are specific to the mandate of the Board. It also focuses on the role the Board plays in the National Development Agenda including the Kenya Vision 2030, MTP III (2018-2022), the Big Four Agenda, Sustainable Development Goals and the African Union's Agenda 2063.

## Background

The formation of the Hydrologists Registration Board was initiated by hydrologists in the MWSI and who were members of the Hydrological Society of Kenya (HSK). The latter is the umbrella body of hydrologists in Kenya and was registered in the year 2000. It was established that there was a need to have a framework for regulation and coordination of the hydrological profession and thus HSK championed for creation of a Board backed by an Act of Parliament through the drafting of the Hydrologists Bill in 2009 and later the Hydrologists Act of 2017. This led to establishment of the Hydrologists Registration Board.

The Hydrologists Registration Board is a body corporate established under the Hydrologist Act No. 19 of 2017. The Board was gazetted on 19<sup>th</sup> July, 2019 and officially inaugurated on 5<sup>th</sup> December, 2019 with the overall mandate of developing, regulating, coordinating and overseeing the practice of Hydrology in Kenya. This is considered as a key component in achieving water and food security under the country's strategic targets as outlined in the Big Four Agenda, Vision 2030, the Third Medium-Term Plan (2018-2022), and the SDGs.

## Mandate

The Hydrologists Registration Board under Section 19 of the Hydrologists Act, 2017 is mandated with the following functions:

- i. To regulate, coordinate and oversee practice of hydrology.
- ii. To promote standards of professional competence and practice amongst hydrologists.
- iii. To coordinate research, investigations and surveys in the hydrological field.

- iv. To recognize institutions that furnish a sufficient guarantee of academic knowledge of practical experience in hydrology.
- v. To demand and certify hydrological studies and reports necessary for design of hydraulic structures.
- vi. To collaborate with other bodies or organization's in development of programs and facilities for advancement of hydrology and well-being of hydrologists.
- vii. To perform any other function that is incidental or consequential to its functions under this Act any other written law.

## **Global, Regional and National Development Challenges**

### **Global Challenges**

#### **a) Climate change**

Climate change has brought about drastic changes in water resources quantity, duration, timing and intensity of rainfall. The major adverse impacts include global warming, increased incidents of floods, droughts, landslides and wildfires, which have seriously negative impacts on the global water supplies. There is a need for skilled and professional hydrologists to apply cutting edge hydrological investigations, research, studies and analysis to inform design of sustainable hydraulic structures and projects, and to provide solutions for alleviating Kenya's water insecurity.

### **Regional Challenges**

#### **a) Transboundary water resources**

Water resources that cross political borders present a complex challenge particularly in managing environmental threats, and in regulating access to and use of the accruing benefits. Pollution of the cross-border water bodies is becoming an increasing challenge that needs to be dealt with. Transboundary water resources are usually associated with long-running conflicts over their use and it requires prudent management of such resources. The Board will seek to ensure that its members are fully conversant with the principles of transboundary water resources management and that all projects and programs they handle fully support the Government's international and national commitments in the use and management of such resources. To this effect, the Strategic Plan will ensure it is aligned to various transboundary water policies, guidelines and strategies including those concerning the construction of hydraulic structures across shared water bodies.

### **National Challenges**

#### **a) Lack of a Standard Education Curriculum**

There is no standard in regards to the study and practice of hydrology and hydrological sciences in the country. The Board is keen on eliminating uncoordinated and sub-standard education in the field of hydrology and hydrological sciences by: ensuring inclusive and equitable quality education; promoting long-term and continuous learning opportunities for all hydrologists; developing skills that are vital to the creation of a workforce that will contribute to development of well-designed infrastructure required to enable Kenya achieve its Vision 2030; and by creating collaborations and partnerships. This will be done by ensuring that the Board's accreditation framework for hydrology and hydrological programs is robust and is aligned to global best practises.

#### **b) Inadequate Research**

There exists a lack of proper framework and synergies in undertaking and coordinating research, investigations, surveys and studies in the field of hydrology. The Board seeks to coordinate these activities in the hydrological field to explain and counter the existing data gaps in the water sector in general while creating synergies for research development and innovations. Currently there is no proper way of keeping inventory of research done in the field of hydrology. The research is rather duplicative and may not capture the diverse issues in the entire sector. Research should be issue driven and directed towards socio economic and environmental impact and sustainable livelihoods.

#### **c) Disaster management**

Both infrastructural and ecological disasters have proved to be a challenge in the country. Hydraulic structures that are not well designed and built according to required standards have often failed, leading to damages and destruction of property and the environment, loss of lives, and loss of investments, among others. Collapsing water storage infrastructure, damaged transport networks including roads and bridges, and unsustainable water supply projects are just a few examples where the work of professional hydrologists could have achieved a difference. There is a need to develop a regulation mechanism that will ensure that such structures are properly designed so as to ensure their sustainability.

#### **d) Unregulated Hydrology Practice**

There is a lack of an effective body to regulate the practice of hydrology, and to maintain professionalism and adherence to regulations. The Board has the overall mandate of developing, regulating, coordinating and overseeing the practice of Hydrology in Kenya. This is considered as a key component in achieving water and food security under the country's strategic targets as outlined in the Big Four Agenda,



Vision 2030, the Third Medium Term Plan (2018-2022), and the Sustainable Development Goals.

**e) Invasive Weeds**

The water hyacinth and other aquatic weeds have caused serious ecological effects in many water bodies such as lakes, rivers and dams. They have also affected negatively the communities who depend on these water bodies for livelihoods and for other economic pursuits. Knowledge of the hydrological processes leading to the formation, growth and dispersion of these plants is critical in providing solutions for the removal of this pollution from our water bodies.

**f) Poor and Unreliable Data-Sharing Technology**

There is currently a lack of proper technological infrastructure to enable easy and reliable sharing of data and information. Lack of adequate modern technologies have hampered the rise in innovations and knowledge sharing and capacity building professionals in the sector. Data cannot be easily processed and distributed to relevant stakeholders. There is therefore a need to incorporate appropriate technologies in the operations of the Board to allow for effective data management and sharing. The Board, through its Continuous Professional Development (CPD) policy, will facilitate the acquisition of new and cutting-edge technologies to hydrology professionals to aid in data collection, analysis, management, storage and sharing.

**g) Pollution**

Kenya's water resources are increasingly being polluted from various point and non-point sources. The point source pollution is caused by inefficient effluent treatment of and the discharging of waste water into water bodies. The non-point source pollution is caused by catchment degradation, poor sanitation, and by disposal of solid waste into water bodies. Properly trained and regulated hydrology professionals will work towards the protection and conservation of water bodies by providing advice, guidance and professional solutions to for the design and protection of water infrastructure and water sources.

**The Board's development role vis-à-vis the National Development Agenda Kenya Vision 2030 Framework**

Following the successful implementation of the Economic Recovery Strategy (ERS) of 2003 by the Government of Kenya, a long-term blueprint was developed - the Kenya Vision 2030. The Vision is motivated by a collective aspiration for a better society by

the year 2030, in order to create a globally competitive and prosperous citizenry. The aim of Vision 2030 is to transform Kenya into a newly-industrialised, middle-income country providing a high quality of life to all its citizens in a clean and secure environment. Kenya Vision 2030 is being implemented through a series of five-year Medium – Term Plans (MTEPs). Currently, MTP III covers the period 2018-2022.

The MTP III seeks to undertake various projects that touch on agriculture, irrigation, roads, environment and water resources including rehabilitation of urban rivers, waste management and pollution control. All these projects require in-depth hydrological reporting to inform on how best to design and implement them.

To achieve these developments, the Board aims at ensuring that hydraulic structures are designed to the required standard by registered and licensed hydrologists. This will enhance the sustainability of water projects and increase water availability.

This Strategic Plan will address MTP III and IV through hydrological analysis, surveys, investigations and research to be carried out prior to implementation of the programs and projects including Irrigation and Drainage Infrastructure Programme, Rural Water Supply Programme, Urban Sewerage and Sanitation Programme, Water Harvesting and Storage Programme, and the Water Resources Management Programme.

### **The “Big Four” Agenda**

This is the current national development agenda that the government has been pursuing for the last five years. The Big Four includes; manufacturing, universal healthcare, affordable housing and food security. Adequate water is an enabler to the delivery of the Big Four Agenda. The Board will assist the Ministry and government as a whole in achieving the key pillars of the agenda by ensuring that it regulates and coordinates skilled professionals to conduct research and hydrological analysis and investigations for better, informed design of hydraulic infrastructure that can be relied on to provide reliable water resources that is the driving force for the various pillars Big Four Agenda.

Hydrological analysis is instrumental in the catchment management and development of hydrological design reports of two (2) large dams and four (4) medium size dams currently under implementation. These are: Thwake, Mwache, Siyoi Muruny, Itare, Karimenu II and Yamo dams. Hydrological studies will also be critical in the design of other upcoming projects.

### **Sustainable Development Goals (SDGs)**

The SDGs 2030 Agenda finds Kenya at a vantage point as it builds on the lessons learnt and foundations laid by the former Millennium Development Goals (MDGs). The

Board through its mandate will promote the achievement of SDGs, specifically those touching on hydrology (SDG 2, 6, 13 and 15). The Board will take on the task of certifying hydrological reports to ensure sound hydrology expertise is used in implementation of hydraulic infrastructures and in turn assist in the development of safe, resilient, sustainable projects.

### **The Constitution of Kenya, 2010**

Articles 42 and Article 43 (b) and (d) of the Constitution of Kenya, 2010 states that every citizen has a right to a clean and healthy environment and right to accessible and adequate housing, and reasonable standards of sanitation, clean and safe water in adequate quantities respectively. The Board has aligned its mandate to these articles by ensuring that the capacity of hydrologists to attain certain standards of professionalism in reporting and designing of the hydraulic structures are met. For example, water storage infrastructure and other related water projects designed to such standards that will ensure safe and clean water supply to all sectors of the economy.

The Board also shall facilitate the achievement of Article 69 (I) on conservation of the environment and will also facilitate the attainment of ecologically sustainable development and use of natural resources, to by setting standards and certifying hydrological reports that adhere to the agreed regulations on environmental and ecological structures.

### **Africa's Agenda 2063**

Africa Agenda 2063's vision is "integrated, prosperous and peaceful Africa, driven by its own citizens and representing a dynamic force in the International arena". The Implementation of Agenda 2063 calls for collective responsibility at continental, regional, national, county and institutional levels of governance. In particular, Aspiration 1(18) calls for Africa to have equitable and sustainable use and management of water resources for socio-economic development, regional cooperation and the environment.

The Board will put in place mechanisms to mainstream aspirations on inclusive growth and sustainable development in environmentally sustainable and climate resilient economies and communities, by ensuring access to basic necessities of life such as water and sanitation. This will be done by aligning and incorporating the aspirations of 1(18) into the Board's work plans. A framework for collaboration with other countries in Africa on water research, training and education will also be established.

## CHAPTER TWO: SITUATIONAL ANALYSIS

### Overview

Kenya is a water-scarce country with per capita water resources of less than 500m<sup>3</sup>. Mean annual rainfall across the country is 680mm, varying from 200mm in the arid and semi-arid areas (ASALs) zone to about 1,800 mm in the humid zone, with the ASALs covering 85% of the country. The main source of water is concentrated in five major catchments. However, the distribution of water is skewed and uneven across these areas. Variability in rainfall in these areas also leads to frequent droughts and floods. With a population of 50 million, only 58% of Kenyans have access to basic drinking water and 32% rely on unimproved water sources such as ponds, shallow wells and rivers. Only 30% have access to basic sanitation currently.

The continued destruction of the country's main water towers and other catchments has continued to threaten Kenya's water security due to depletion and degradation of water resources. This destruction has been through deforestation, poor farming practices, water pollution, sedimentation and over-abstraction. Water insecurity is further exacerbated by the harsh effects of global warming and climate change, increasing water demand due to population growth and increased development activities. There is a need to protect available water resources by ensuring conservation and prudent use and management of these resources. This will help guarantee present and future water availability.

In order to meet the national goals as envisioned through the SDGs, Vision 2030, the Big Four Agenda, and MTP III and IV, there is a need to provide sustainable solutions to the country's water challenges. This can be achieved through sustainable management and development of our water catchments and resources. This requires skilled, well-trained and dedicated professionals to take the lead in providing the needed solutions.

Some of the challenges facing the hydrology sector include limited sector investment, an ever-increasing demand of water for the various uses and degradation of catchment areas among others.

The situational analysis of the Board focuses on achievements, challenges and lessons learnt. An external and internal analysis was undertaken using the Strengths, Weaknesses, Opportunities and Threats (SWOT) and Political, Economic, Socio-cultural, Technological, Environmental and Legal (PESTEL) analysis. A stakeholder analysis was also undertaken with the aim of establishing the role of each stakeholder in the implementation of the strategy.

## Review of the Previous Strategic Plan

This is the first Strategic Plan to be developed by the Hydrologists Registration Board.

### Achievements

The achievements of the Board since gazettelement in July 2019, are as summarised on Table 2-1 below;

Table 2-1.: Achievements

No.	Achievements	Evidence
	Establishment of the Board through an Act of Parliament, No 19 of 2017 (Hydrologists Act, 2017)	Hydrologists Act, 2017
	Appointment of the Members of the Board and the Registrar	Gazette Notice 6466-6468 of appointments dated 19th July, 2019 (Vol. CXXI—No. 90)
	Formation of Board Committees and development of respective Terms of Reference.	Appointment letters and Terms of Reference for each Board Committee
	Categorization of the Board by the State Corporations Advisory Committee (SCAC)	Letter from SCAC
	Allocation of office space for the Hydrologists Registration Board Secretariat.	Letter from the Secretary Administration, Ministry of Water, Sanitation and Irrigation
	Deployment of MWSI employees to the Board	Deployment letters
	Provision of operational budget	Printed estimates
	Approved annual work plans and budget	Annual/ Quarterly Appraisal Reports; Approved Budget summary
	Development of Human Resource and Policy Instruments	Approved Human Resource and Policy Instruments
	Draft Hydrologists Regulations 2022 developed	Draft Hydrologists Regulations document
	Draft Strategic Plan developed	Draft Strategic Plan document

## Challenges

The challenges faced by the Board since its inception in 2019 are summarised in Table 2-2 below.

**Table 2-2: Challenges**

No.	Challenges	Mitigation Measures
1.	Inadequate Funding	Mobilization of more resources from the Exchequer and from development partners; generation of A-in-A.
2.	Delay in approval of Human Resource and Policy Instruments	The Ministry is facilitating the approval and fast tracking of the approved Instruments by the relevant Government bodies.
3.	Lack of staff	Secure funding to recruit key staff.
4.	Lack of Office Space	Acquire adequate office space.

## Lessons learnt

- i. Exchequer funding is assured but not adequate.
- ii. There is a need to develop clear resource mobilization strategies to support the implementation of the Board's mandates.
- iii. There is a need for additional qualified staff to take charge of all of the Board's departments so as to ensure seamless running of operations.
- iv. Networking and collaboration with the National and County governments, institutions and other stakeholders is required for enhanced development;
- v. Adequate institutional capacity development is critical for effective implementation of the Board's current programs and work plans.
- vi. The Ministry's intervention is required in removal of bottlenecks that hinder implementations of the Board's mandate.

## Environmental Scan

### Strengths, Weaknesses, Opportunities and Threats (SWOT) Analysis

SWOT is an acronym for Strengths, Weaknesses, Opportunities and Threats. SWOT Analysis is a useful technique for understanding an organisation's Strengths and Weaknesses, and for identifying both the Opportunities open and the Threats an organisation may face. SWOT analysis helps to carve a sustainable niche for an organisation in its market.

## Strengths

The strengths of the Board are summarised in Table 2.3 below:

**Table 2-3: Strengths**

No	Strength	Strategic Implication	Strategic Response
1.	Hydrologists Act, 2017	Legally established and recognized government entity	Comply to the provisions of the Act
2.	Defined mandate as per Hydrologists Act, 2017	Mandates are clearly spelt out	Comply to the provisions of the Act
3.	Supportive Ministry's Top Management	Strategic guidance and policy formulation	Continuous engagement with top management for guidance and policy formulation
4.	Supportive Board Members	Strategic guidance and policy formulation	Continuous capacity building of the Board Members
5.	Steering team headed by the Registrar/CEO	Provide leadership and administration of the Board.	Mobilisation of financial resources funds
			Staff Recruitment
			Acquisition of adequate office space
6.	Hydrological Society of Kenya (HSK)	Existence of an umbrella body in which many Hydrologists are members	Ensuring a ready source of hydrologists to be registered by the Board.
7.	HR Policy Instruments approved	Strategic guidance on staff establishment.	Gives the Board powers to recruit its own staff

## Weaknesses

The weaknesses of the Board are summarised in table 2.4 below:

**Table 2-4: Weakness**

No	Weakness	Strategic implication	Strategic Response
1.	Inadequate funding to complete the Board's programs	Ksh. 50 million required annually against the current allocation of Ksh. 15 million  Limits Board activities and effectiveness.	Mobilisation of additional resources from the Exchequer and from development partners
			Generation of A-in-A

2.	Inadequate human resources capacity	Planned programs cannot be adequately implemented	Recruit staff as per the approved Staff Establishment;
			Develop staff capacity-enhancing initiatives.
3.	Lack of office space and equipment	Planned programs cannot be adequately implemented	Secure adequate office space and equipment.
4.	Lack of visibility and awareness of the Board	Stakeholder involvement is reduced. Low uptake in the number of registered professionals	Conduct public sensitisation and awareness creation through media prints and other effective platforms.
5.	Lack of comprehensive data on the number of Hydrology Professionals in the country	Planning and decision making on important issues touching on hydrology professionals becomes difficult	Develop an inventory for all the hydrologist professionals across the country.

## Opportunities

The opportunities of the Board are summarised in Table 2.5 below:

**Table 2-5: Opportunities**

No	Opportunities	Strategic Implication	Strategic Response
1.	The "Big Four" Agenda	Opportunity for increased hydrological services.	Registered hydrology professionals to undertake hydrological analyses, surveys and investigations to support development of manufacturing, affordable housing, nutrition and food security, and universal health care.



2.	Government support through the Ministry of Water, Sanitation and Irrigation	Funding from the exchequer is currently guaranteed.  Provision of temporary staff to support the activities of the Board	Adhere to budgeting regulations of State Corporations
3.	Higher education institutions	A collaboration platform	Initiate collaborations and partnerships with institutions in training and setting of standards.
4.	Existence of good will from developments partners	Access to additional funding for the Board's programs.	Request development partners to avail funds.
5.	Rapid growth in Information Communication Technology (ICT)	Improved relations with development partners.  Seamless interaction with stakeholders, awareness creation.	Use of ICT in promoting the Board through an interactive website and online media platforms.
6.	Goodwill among strategic stakeholders	A collaboration and partnership platform	Initiate collaborations and partnerships for training and other activities
7.	Availability of hydrology professionals	Activities are carried out professionally	Continuous capacity building of professionals
8.	Technological	Emerging modern technologies	Ease and efficiency in hydrological analysis, surveys and investigations.  Ease in monitoring of hydrological activities.

## Threats

The threats of the Board are summarised in table 2.6 below:

**Table 2-6: Threats**

No	Threats	Strategic Implication	Strategic Response
1.	Slow uptake of registration by the hydrology professionals	Inability to undertake hydrological research, investigations, surveys, and to design hydraulic infrastructure and to do supervisory works.	Create awareness
			Recruitment
2.	Professional misconduct	Affects the credibility and robustness of hydrological designs, analyses, surveys and investigations.	Train the registered hydrologists.
			Ensure there is adequate and deterrent punishment for professional misconduct.
3.	Lack of capacity to enforce the Hydrologists Regulations	Inability of the Board to ensure proper hydrological designs and reports.	Develop collaborative frameworks for working with other water sector institutions and security and administration officials that have the mandate and capacity to enforce.
		Malpractice by registered and licensed hydrology professionals.	
		Laxity in registering with the Board as hydrology professionals.	
4.	Other professional bodies	Lack of collaboration with other professional regulatory bodies to ensure proper enforcement of the Hydrologists Regulations, 2022.	Develop collaborative frameworks for working with other water sector institutions and government regulatory bodies to ensure compliance to the Hydrologists Regulations.

## Environmental Scanning (PESTEL Analysis)

Factors within the Board’s operating external environment that are political, economic, social, technological, environmental and legal in nature and their implications are analysed in Table 2-7.

**Table 2-7: Pestel Analysis**

Category	Issues	Description
Political	Change in political leadership	Change in Government policies and priorities impacting on the functioning of the Board.
	Devolution	Poor collaboration and weak linkages between county governments and other bodies.
Economic	High public debt	Increased interests leading to reduced funds allocated to the water sector.
	High Taxation	High cost of imported equipment and technical services for hydrological analyses, surveys and investigations.
Social	High population growth	Increased demand for and abstraction of water resources, increased development in roads infrastructure, agriculture, leading to conflicts.  Pollution of water resources.  Water catchment degradation.
Technological	Rapid technological advancements	Cyber crime  Redundancy brings about increased costs
Environmental	Climate change	Land degradation, drought, floods and desertification.  Decrease in quantity of water resources.
	Pollution of water resources	Decrease in quality of water resources.
	Land use and land cover change	Land degradation, erosion, sedimentation.

Legal	Hydrologists Act, 2017	Inconsistencies and gaps in the Act.
	International and regional regulations, conventions and protocols.	Setting standards, sharing of information platforms for capacity building, international exposure and opportunities of accessing financial support.

## Stakeholder Analysis

Stakeholder analysis is the process of assessing the impact of a decision on relevant parties. This information is used to assess how the interests of those stakeholders and those of the organization should be addressed in a project plan, policy, program, or other action. The following is the outcome of the stakeholder analysis:

**Table 2.8: Stakeholder Analysis**

Stakeholder	Stakeholder expectation	Expectations of HRB
Public/citizenry	<p>Active participation in stakeholder consultations and other Board activities.</p> <p>Enhanced awareness of Board activities and programs.</p> <p>Efficient and effective services.</p> <p>Transparency and accountability in service delivery.</p>	<p>Active participation.</p> <p>Regular feedback on our services.</p> <p>Responsive citizenry.</p> <p>Compliance with laws and regulations.</p>
Staff	<p>Commitment to staff welfare.</p> <p>Reward for excellent performance.</p> <p>Favourable terms and conditions of service.</p>	<p>Improved productivity.</p> <p>Provision of necessary skills and manpower.</p> <p>Exhibit good image of the Board.</p> <p>Efficient and timely services to the citizens and stakeholders.</p>

	<p>Conducive work environment.</p> <p>Skills and capacity development and career progression.</p> <p>Efficient and effective Human Resource services.</p> <p>Participatory and fair appraisal system.</p>	<p>Adherence to policies, rules, and regulations of the Board.</p> <p>Efficient utilisation of allocated resources</p>
<p>Ministry of Water, Sanitation and Irrigation</p>	<p>Timely, efficient and prudent utilisation of allocated resources.</p> <p>Registration, licensing and regulation of hydrology practitioners.</p> <p>Professional analysis of hydrological projects and programs.</p> <p>Preparation of hydrological reports.</p> <p>Sustainable programs and projects.</p> <p>Research and offering professional advice on national and regional hydrological phenomena.</p>	<p>Set policy direction and guidelines</p> <p>Financial, technical and administrative support.</p> <p>Collaboration on key matters.</p> <p>Timely disbursement of allocated resources.</p> <p>Oversight over Board activities.</p>

<p>Ministries, Departments and Agencies (MDAs)</p>	<p>Professional analysis and design of hydrological projects and programs.</p> <p>Preparation of hydrological reports.</p> <p>Research and offering professional advice on national and regional hydrological phenomena.</p>	<p>Certification of hydrological reports necessary for the design of hydraulic structures.</p> <p>Strengthen support and collaboration.</p> <p>Funding of research and training programs.</p> <p>Timely disbursement of allocated resources.</p> <p>Oversight over Board activities.</p> <p>Regulate and protect water resources.</p> <p>Provision of data</p>
<p>Hydrological Society of Kenya</p>	<p>Operationalization of the Hydrologists Act, 2017.</p> <p>Registration and licensing of hydrology practitioners.</p>	<p>Registration and licensing of hydrologists.</p> <p>Implementation of hydrological projects and activities.</p>
<p>Academic and research institutions</p>	<p>Training and capacity development of hydrologists.</p> <p>Provide students for attachment and internship.</p> <p>Share data and information.</p> <p>Partnerships and collaboration in research, education, governance and policy.</p> <p>Collaboration on hydrological research and education</p>	<p>Qualified, competent and well-trained hydrologists.</p> <p>Partnerships and collaborations in training and capacity development of hydrologists.</p> <p>Partnerships and collaboration in research, education, governance and policy.</p> <p>Certification of academic transcripts, certificates and qualifications.</p> <p>Accreditation of academic programs.</p> <p>Technical and financial support for training and research programs.</p>

	Sharing of information and facilities	Confidentiality on shared information and feedback.
Hydrology practitioners and consultants	<p>Efficient and timely services on registration, licensing, feedback on public complaints.</p> <p>Facilitate CPD</p> <p>Approval of hydrological reports</p> <p>Fair decision on applications</p>	<p>Compliance with laws, regulations and best business practises.</p> <p>Professional analysis for hydrological programs and activities.</p> <p>Timely payment of fees.</p> <p>Continuous upgrading of skills and knowledge.</p> <p>Provision of timely and quality services for clients.</p>
County Governments	<p>Guidance on the Hydrologists Regulations and other laws and guidelines.</p> <p>Capacity building of hydrology practitioners.</p> <p>Advisory and technical support.</p>	<p>Compliance with the Hydrologists Regulations and other laws and guidelines.</p> <p>Enforcement of the Hydrologists Regulations on the licensing of hydrologists and preparation of hydrological design reports.</p> <p>Partnership and collaboration in training, research and other hydrological programs and activities.</p> <p>Share data and information.</p>
Development partners and international organizations	<p>Collaboration in development of programs and facilities for advancement of hydrology.</p> <p>Efficient use of resources.</p> <p>Timely achievement of planned outputs and outcomes of programs and</p>	<p>Financial and technical support for specific programs and activities.</p> <p>Timely disbursement of allocated resources.</p> <p>Collaboration on hydrological research, training and education.</p>

	<p>activities being implemented.</p> <p>Sustainable programs and projects.</p> <p>Involvement in stakeholder consultations in planning for the sector.</p>	
Professional and other regulatory bodies.	<p>Compliance of Board management and technical staff through registration and renewal of professional membership.</p> <p>Provide opportunities for continuous professional development.</p>	<p>Improved standards of technical expertise and professional management in the sector.</p> <p>Partner in the implementation of development projects and programs.</p> <p>Improved innovation, research, development and policy analysis.</p>



## CHAPTER THREE: STRATEGIC MODEL

### Overview

This Chapter presents the strategic model that sets out the vision, mission, overall goal, core values and guiding principles that guide the implementation of this Strategic Plan. It also outlines the Key Result Areas (KRAs) that inform the focus areas for implementation of the strategic objectives and strategies.

### Vision, Mission, Overall Goal, Core Values, Motto and Guiding Principles

The Board will be guided by the following strategic foundations over the planning period:

#### a) Vision

A quality and robust hydrological practice and management.

#### b) Mission

To ensure good governance in regulation, oversight and coordination of the practice of hydrology.

#### c) Overall Goal

Promote good governance in hydrology practice.

#### d) Core Values

The Board will draw its values from the Constitution of Kenya, 2010, Article 10, which details the national values and principles of governance, which include the following:

- i) **Sustainable Development:** The Board will pursue development in the sector that satisfies the needs of the present generation without compromising the capacity of future generations, guaranteeing balance between economic growth, care for the environment and social well-being.
- ii) **Honesty and Integrity:** The Board shall conduct its affairs in serving the public in an honest manner upholding the highest degree of responsiveness to the aspirations of the public it serves.

- iii) **Human Dignity:** The Board is committed to upholding reasonable standards of living through quality and robust hydrology practice.
- iv) **Teamwork and focus on results:** The Board will relentlessly pursue timely attainment of targeted results at all levels through high-level coordination, networking and collaboration with all staff, stakeholders and the public.
- v) **Innovation:** The Board is committed to innovativeness, creativeness, resourcefulness and focused planning and customer-driven service delivery.
- vi) **Participatory approach:** The Board is committed to consultations, joint and comprehensive partnership with all its stakeholders in all its undertakings.

e) **Motto**

Enhancing Professionalism in Hydrology.

f) **Guiding Principles**

Governance and management of the water sector will be guided by the national values and principles set out in articles 10, 43, 60, 69 and 232 of the Constitution of Kenya 2010. More specifically, the following principles shall apply:

- i. **Intergovernmental and institutional collaborative effort:** National and County governments will work in a consultative and collaborative manner with a clear coordination framework to promote the objectives of the sector, taking into account the distinct mandates of each level of government and incorporating recognition of concurrent as well as overlapping areas of jurisdiction.
- ii. **Integrated planning and resource management:** Planning of water sector activities should take a national, cross-county and county approach towards the development of a national integrated investment and financing plan. The management and development of water resources shall take into account different and competing interests of groups, sectors and the needs of the environment. Planning for water service and resource management should be integrated.
- iii. **Respect for human rights:** Every sector player shall act in a manner that protects, respects and fulfils the human right to water and sanitation. Every Kenyan has a right to clean and safe water in adequate quantities, and to reasonable standards of sanitation. The management and use of

water resources should take into account the needs and rights of riparian communities as well as guarantee access rights to other users of surface and groundwater resources.

- iv. **Equity and inclusivity:** Water resources shall be allocated fairly according to need, value to the economy, efficient usage, mindful of both marginalized and vulnerable groups. In sharing water resources, equity across counties will be applied.
- v. **Polluter pays principle:** The costs associated with cleaning up any element(s) of the environment including water resources damaged by pollution will be compensated by the polluter, under the regime of international environmental law.
- vi. **Consumer protection:** The sector will implement measures that shall ensure that water is available, accessible, affordable, reliable, sustainable, and in the right quality, quantity, time while being mindful of marginalized and vulnerable groups.
- vii. **Efficiency and value for money:** Every effort should be made in maximizing output per unit of public resource, and in maximizing the expected outcome(s) across the value chain.
- viii. **Ring-fencing:** Revenues generated from licensing hydrology practice, fees and tariffs should be used for the purpose of promoting hydrology practice activities only.
- ix. **Public participation and stakeholder consultation:** Measures should be put in place to ensure that those to be affected either positively or negatively by the process of developing hydraulic structures are involved in the decision-making processes. Key stakeholders should also be consulted in the processes (Article 174 C of the Constitution of Kenya, 2010).
- x. **User pays principle:** the recognition of water resources as an economic and social good, and the application of the most efficient pricing model to ensure full cost coverage while meeting the social, economic and environmental costs.

## **Key Result Areas (KRAs)/ Strategic Focus Areas**

In line with Board's Vision and Mission, five (5 no.) Key Result Areas which reflect the Board's mandate and responsibilities in the realization of Kenya Vision 2030, MTP III and IV, Big Four Agenda, SDG's and Agenda 2063 have been identified and will be the pillars of this Strategic Plan.

The Key Result Areas are:

### **KRA 1: Regulation, Coordination and Overseeing the Practice of Hydrology**

- The Board will coordinate, regulate and oversee the practice of hydrology through registration, licensing and regulating hydrologists, and by ensuring full operationalization of the Hydrologists Act, 2017.

### **KRA 2: Research in Hydrological Services**

- The Board will promote hydrological development by facilitating resources for coordinating research, investigations and surveys and providing a platform for sharing with other hydrology professionals and with all other stakeholders, and shall provide all stakeholders with professional advice, guidance and services concerning activities related to hydrology and the practice of hydrology in Kenya.

### **KRA 3: Certification of Hydrological Reports for the Design of Hydraulic Structures**

- The Board shall monitor and enforce adherence to set professional and ethical standards to protect the public and the hydrology profession from irresponsible work, through preparation of guidelines for the preparation of technical hydrology reports on design and implementation of hydraulic structures and hydrological works, to be adhered to by all hydrologists undertaking such works.
- The Board will certify and approve all hydrological designs and reports to ensure that professional standards have been adhered to.

### **KRA 4: Partnerships and Resource Mobilization**

- The Board will promote education and training in hydrology by partnering with other institutions that have capacity to offer these services and will endeavour to raise financial resources from these partnerships to fund activities and programs aimed at strengthening and developing the Board and its members, and supporting its activities.

### **KRA 5: Institutional Development and Capacity Building**

- The Board will build institutional capacity through enhancing corporate image and branding, acquiring office space, equipment and vehicles, enhancing human

resources capacity and integrating ICT systems in its operations in order to deliver on this Strategic Plan through recruitment of officers to undertake administrative, technical and support functions.

The strategic elements of the KRAs have been summarised in Table 3-1 below.

**Table 3--1: Strategy Matrix**

Key Result Areas/ Strategic Focus Areas	Strategic Objectives	Strategies
Regulation, Coordination and Overseeing the Practice of Hydrology	To coordinate, regulate and oversee the practice of hydrology	<p>Registration and licensing of hydrologists.</p> <p>Develop an inventory of hydrology professionals in the country.</p> <p>Monitor and evaluate the level of compliance.</p> <p>Operationalize the Hydrologists Regulations, 2022.</p> <p>Development of policies, standards and procedures manuals.</p> <p>Review and amend the Hydrologists Act, 2017.</p>
Research in Hydrological Services	To coordinate research, investigations and surveys in the hydrological field	<p>Establish an operational office within the Board for coordinating research, investigations and surveys carried out by stakeholders.</p> <p>Undertake research studies in the hydrological field.</p> <p>Hold regional and international conferences.</p> <p>Establish and maintain a linked database of academic, professional and technical works in hydrology.</p> <p>Establish a professional journal for publishing professional research, investigations and surveys carried out in Hydrology.</p>

Certification of hydrological studies for the design of hydraulic structures	To certify hydrological studies and reports necessary for the design of hydraulic structures	Develop standards for preparation of hydrological reports. Certify hydrological designs and reports.
Partnerships and resource mobilization	To partner with five (5) institutions or bodies in research, training and resource mobilization by 2026	Enter into memoranda of understanding with five (5) institutions or bodies. Mobilize Ksh. 200 million from the Exchequer. Mobilize Ksh. 100 million from Development partners. Collect revenue through A-I-A.
Institutional development and capacity building	To build institutional capacity by the year 2026	Acquire Corporate Image and Branding. Acquire office space, equipment and vehicles. Implement the approved Human Resource and Policy Instruments. Develop and integrate ICT systems in Board operations.

# **CHAPTER FOUR: IMPLEMENTATION AND COORDINATION FRAMEWORK**

## **Overview**

This Chapter presents the proposed organizational structure of the Hydrologists Registration Board and its staffing levels. It also outlines the human resource gaps, financial resource requirements, risk analysis and mitigation measures. The Board will ensure effective resources mobilization from the Government of Kenya (GoK), development partners, and Public-Private Partnerships (PPPs) collaboration.

## **Structure of the Organization**

The present Board structure provides for a Board of Directors, which is responsible for setting and reviewing policy. The Registrar/Chief Executive Officer is responsible for playing a leadership role in management and administration of the Board. The Registrar/CEO also implements decisions and resolutions of the Board. The Board consists of Directorates, Departments, Divisions and Units that play an important role in implementing the Board's mandate. The execution of the mandate of the Board and its institutional set-up is as discussed below:

### **Structure of the Hydrologists Registration Board**

#### **a) Board of Directors**

The Board of Directors has delegated authority for the operations and administration of the organization to the Registrar/CEO. The Board has no operational involvement in the conduct of the organization's business activities and delivery of services. Its role is confined to setting and reviewing policy.

#### **b) Registrar/Chief Executive Officer's Office**

This office shall be responsible for providing leadership, management and coordination role in the administration and monitoring of the activities that will ensure efficacy in the implementation of policy decisions, for the organization to deliver its mandate. The office shall have full operational responsibility in the development, implementation and evaluation of strategic business plans agreed by the Board of Directors.

#### **c) Directorates and Departments**

Directorates are designed to focus on key roles, functions and responsibilities. Similarly, functions will be strengthened to give the Board the impetus to become relevant in the water sector. The Directorates are further divided into Departments so as to achieve greater functionality. The Hydrologists Registration Board is structured as follows:

#### **I. Registration, Licensing and Resource Centre Directorate**

This Directorate will regulate, co-ordinate and oversee the practice of hydrology; it is responsible for registration and licensing of hydrology professionals and hydrology consulting firms and is the repository of information with regard to hydrologists' registration and qualifications. It will have the following departments:

##### **a) Registration & Licensing Department**

The Department will be responsible for processing applications for registration and issuance of licenses.

##### **b) Hydrology Resource Centre Department**

The Department is responsible for the collection and management of information relating to registration of hydrology professionals and their qualifications, and hydrological survey and research reports, hydrological designs, data and any other data.

#### **II. Hydrology Research, Standards and Compliance Directorate**

The Directorate will ensure compliance and enforcement of the Hydrologists Act, 2017 and the Hydrologists Regulations, 2022.

##### **a) Hydrology Research and Standards Department**

The Department is responsible for the development of Hydrology standards and will closely liaise and coordinate with other agencies in the formulation and development of the relevant Hydrology standards.

##### **b) Compliance and Enforcement Department**

The Department will be responsible for ensuring effective and efficient compliance and enforcement of the Hydrologists Act, 2017 and the regulations thereunder.

#### **III. Capacity Building and Accreditation Directorate**



The Directorate is responsible for the development of capacity in the Hydrology profession and providing accreditation for Hydrology education, training and practice. It consists of the following Departments.

**c) Training and Professional Development Department**

The Department is responsible for developing programs for the continuous improvement of hydrologists' knowledge, skills and competencies.

**d) Accreditation Department**

The Department is responsible for the accreditation of hydrology programmes and qualifications and ensuring compliance to accreditation parameters.

**IV. Policy, Corporate Research and Strategy Directorate**

The Directorate is responsible for the adoption and implementation of effective strategies for resource mobilization, policy formulation, research, quality assurance, coordination of risks management and performance management. It consists of the following Departments.

**a) Corporate Research, Planning and Strategy Department**

The Department is responsible for coordinating research, policy formulation and the development of strategic plans.

**b) Quality Assurance and Performance Management Department**

The Department is responsible for quality assurance, business continuity processes, performance management contracting, and the development and monitoring of the implementation of the Board's annual works plans.

**c) Partnership & Resource Mobilization Department**

The Department is responsible for creating partnerships, and securing and mobilizing resources for the Board.

**V. Corporate Services Directorate**

This Directorate is responsible for providing leadership and coordination of the following Departments:

**a) Finance and Accounts Department**

The Department is responsible for ensuring prudent management of financial resources and the reporting thereof within the existing legal framework.

**b) Human Resource Management and Administration Department**

The Department is responsible for the provision of strategic leadership to ensure optimal utilization and management of the Board.

**c) Information and Communication Technology (ICT) Department**

This Department is responsible for promoting the use of ICT in delivery of services towards realization of the Board's mandate.

**d) Corporate Communications Department**

The Department is responsible for establishing the Board's visibility and manage branding activities.

**VI. Corporation Secretary & Legal Services Directorate**

The Directorate is responsible for providing advice and support on all legal matters to the Board, providing secretariat services to the Board, ensuring Board evaluation for promotion of good corporate governance, ensuring compliance with all statutory, legal, social and regulatory requirements in the execution of the Board's mandate.

**VII. Internal Audit Directorate**

This Directorate will be responsible for providing assurance on the Board's internal control systems, risk management framework and governance structure. It is also responsible for providing independent, objective assurance and consultative activity aimed at adding value and improving the Board's operations, ensuring compliance with statutory laws and regulations, gives risk assurance and seeks to identify breakdowns in internal controls.

**VIII. Supply Chain Management Department**

This stand-alone Department is responsible for procurement of goods, works and services, inventory management as well as disposal of goods, and ensuring compliance with the Public Procurement and Asset Disposal Act, 2015 and other regulatory statutes.

## Organizational Structure Organogram

In line with its core business, the Board has developed an organizational structure that seeks to facilitate effective delegation, management processes and information flow. *Annex 1* depicts the Board's Organizational Structure.

### Staff Establishment

The Board currently has only one full time employee, who is the Registrar/CEO; other staff have been deployed on a short-term basis from the Ministry of Water, Sanitation and Irrigation. The Board therefore anticipates recruiting a number of employees to meet its human resource needs as shown in Table 4.1.

### Proposed Staffing Level

In order to realize its mandate, the Board will be staffed as follows:

**Table 4-2: Summary of Staff Establishment**

S/No.	Directorate/ Department	Establishment	In-post	Variance
1.	Registrar/Chief Executive Officer's Office	1	1	0
2.	Corporation Secretary and Legal Services Directorate	2	0	2
3.	Registration, Licensing and Resource Centre Directorate	11	0	11
4.	Hydrology Research, Standards and Compliance Directorate	19	0	19
5.	Capacity Building and Accreditation Directorate	10	0	10
6.	Policy, Corporate Research and Strategy Directorate	9	0	9
7.	Corporate Services Directorate	21	0	21
8.	Internal Audit Department	2	0	2
9.	Supply Chain Management Department	3	0	3
	<b>GRAND TOTAL</b>	<b>78</b>	<b>1</b>	<b>-77</b>

## Human Resource Development Strategies

The Board will put in place human resource strategies to develop its staff so as to effectively deliver on its mandate. This will require enhancing staff competencies, improving the working environment, enhancing performance management, succession management and enhancing knowledge management.

## Financial Resources

### Financial Requirements

In summary, the Board will require Ksh. 529,800,000 to implement this Strategic Plan over the five-year period. Table 4.2 gives a breakdown of this requirement by KRA.

**Table 4-3: Financial Requirements of the Strategic Plan as per the Key Result Areas**

Key Results Area	Resource Requirements						Total
	Printed (Baseline) Estimates 2021/22	Projected Estimates (Ksh. Mn)					
		2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	
Regulation, Coordination and Overseeing the Practice of Hydrology	2.7	19.5	10.3	7.6	3.9	4.5	45.8
Research in Hydrological Services	-	16	11.2	36.3	26.5	27	117
Certification of Hydrological Studies for the Design of Hydraulic Structures	-	7.5	8.9	1.2	1.2	1.2	20
Partnerships and Resource Mobilization	-	3.1	3.1	3.1	3.1	3.1	15.5
Institutional Development and Capacity Building	12.3	69	68	67.5	63.5	63.5	331.5
<b>Total</b>	<b>15</b>	<b>115.1</b>	<b>101.5</b>	<b>115.7</b>	<b>98.2</b>	<b>99.3</b>	<b>529.8</b>

The increase in resource requirements for the Institutional Development and Capacity Building is to cater for establishment of the Board’s offices, recruitment of key staff, incorporation of ICT in the Board’s operations, and creating awareness about the Board’s mandate and the services it offers.

## Resource Gaps

The allocation projections per the Government of Kenya for the period of the Strategic Plan is approximately Ksh. 161,000,000 is shown in the Table 4.3 below. This leaves a funding gap of Ksh. 368,800,000 which will be mobilized from:

- i. A-in-A generated from licensing and regulation of hydrologists and related activities;
- ii. A-in-A generated from offering and conducting Continuous Professional Development (CPD) courses;
- iii. Development partners.

**Table 4-4: Summary of Resource Gap (Ksh. Millions) Financial Year 2022/23 - 2026/27**

Expenditure	Estimates in Ksh. Millions	Requirement in Ksh. Millions					Projected Allocation in Ksh. Millions				
		2022/23	2023/24	2024/25	2025/26	2026/27	2022/23	2023/24	2024/25	2025/26	2026/27
Financial Year	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2022/23	2023/24	2024/25	2025/26	2026/27
Recurrent	15	115.1	101.5	115.7	98.2	99.3	15	16	18	20	22
A-I-A	-	-	-	-	-	-	1.5	3.5	6	7	8
Development	-	16	11.2	36.3	26.5	27	-	10	15	20	25
<b>Sub-total (MTEF)</b>	<b>15</b>	<b>131.1</b>	<b>112.7</b>	<b>152</b>	<b>124.7</b>	<b>126.3</b>	<b>15</b>	<b>26</b>	<b>33</b>	<b>40</b>	<b>47</b>
Recurrent/ Deficit Funding gap							98.6	82	91.7	71.2	69.3
Development /Deficit Funding gap							16	1.2	21.3	6.5	2
<b>Total/Deficit Funding gap</b>							<b>114.6</b>	<b>83.2</b>	<b>113</b>	<b>77.7</b>	<b>71.3</b>

## Resource Mobilization Strategies

The overall goal of resource mobilization is to strengthen the Board’s funding through diversification of revenue streams. In this regard, the following strategies will be used to generate revenue:

### I. Government grants

The - Board intends to mobilize additional funds from the Exchequer once all its operationalization tools are ready for implementation.

### II. Grants from Development partners

Once operational, the Board intends to mobilize funds for programs related to its core mandate. These funds will be mobilized through development of technical proposals and taking on development partners to support the initiatives

### III. Internally-generated funds

The Board intends to mobilize funds from fees charged for registration and licensing of hydrology professionals; for certification and approval of hydrological reports; from the facilitation and administration of CPD courses; and from associated fees as detailed in the Hydrologists Regulations, 2022.

## Risk Analysis and Mitigation Measures

The Board will adopt a risk management framework policy that details the various risks and their categorization (High, Medium or Low), giving planned actions for mitigation, monitoring and reporting of those risks. The Risk Management Framework is as summarized below:

**Table 4-5: Summary of the Board’s Risk Management Framework**

<b>Risk category</b>	<b>Key areas</b>	<b>Level of Risk</b>	<b>Potential impact</b>	<b>Mitigation strategy</b>
Strategic	Lack of stakeholder participation	High	Delay in operationalization of the Act  Lack of acceptability of Policy documents	Undertake stakeholders’ analysis for all activities and engage them as per the

				Constitution of Kenya, 2010
	Possible litigation from clients due to the requirements to pay fees and provide reports to the Board for approval	Medium	Delay in operations of the Board  Will hinder generation of A-in-A	Sensitization & awareness creation  Develop alternative dispute resolution mechanisms
	Weak governance at the National and County levels	Medium	Delays in gazettment and approval of Policy documents  Implementation of un-approved projects	Sensitization of both levels of Government  Enhance institutional collaboration
Operations	Systems failures	Medium	Disruption of services  Loss of data and information	Establishment of Integrated Security Management Systems
	Duplication of functions within professional bodies	Medium	Delay of project implementation due to confusion  Implementation of projects not approved by the Board	Continuous review of roles  Sensitization and awareness creation
	Lack of implementation of the approved Staff Establishment	High	Inability to implement the Board's mandate	Engage the National Treasury, SRC  Enhance generation of A-in-A
Legal	Resistance to implementation of the Hydrologists Regulations 2022	Medium	Litigations  Implementation of un-approved structures	Continuous sensitization and engagement  Collaboration with other

	Inadequate enforcement of the Hydrologists Regulations			regulatory institutions/ agencies
Financial	Inability to mobilize adequate financial resources	Medium	Inability to implement the Board's mandate	Increased resources mobilization and continuous identification and utilization of partnerships, networks and donor support
	Budgetary cuts	Medium	Slow implementation/ stalling of programs and projects	Efficient utilization of available resources  Diversification of sources of funding

NB: The Board's Implementation Matrix is contained in ***Annex II***.



# **CHAPTER FIVE: MONITORING, EVALUATION AND REPORTING**

## **Overview**

This Chapter covers monitoring and evaluation (M&E), and review of the Strategic Plan. The purpose of M&E is to guide the implementation of the Plan by tracking activities, outputs and outcomes to find out whether targets are being achieved. In case the targets are not achieved, corrective actions are suggested.

Due to the important role played by M&E, as well as the reporting process, in providing information for decision-making, the Board developed a Monitoring and Evaluation Framework. However, for M&E and consequent reporting to be undertaken successfully, funds amounting to at least 1% of the Board's approved budget should be made available for that purpose.

## **Monitoring - Institutional framework and frequency of monitoring and reporting**

The monitoring of the Strategic Plan will be a continuous function that uses systematic data collection on specified indicators to give management and the main stakeholders in the ongoing interventions, indications on the extent of progress, achievement and progress in the use of allocated funds. The data collected will be analysed to prepare quarterly and annual reports. The Board's Monitoring and Evaluation Framework is contained in *Annex III*.

## **Evaluation - Mid-term and end-term evaluations and reporting**

The Board will carry out mid-term and end-term evaluations which will be systematic and objective assessments of the ongoing or completed projects, programs or policy formulation including their design, implementation and results. The aim will be to determine the relevance and fulfilment of objectives, development efficiency, effectiveness and sustainability. Evaluation will be institutionalized through the formation of a Monitoring and Evaluation Committee. Mid-term and end-term reports will be prepared to guide decision-making and for dissemination to the various stakeholders.

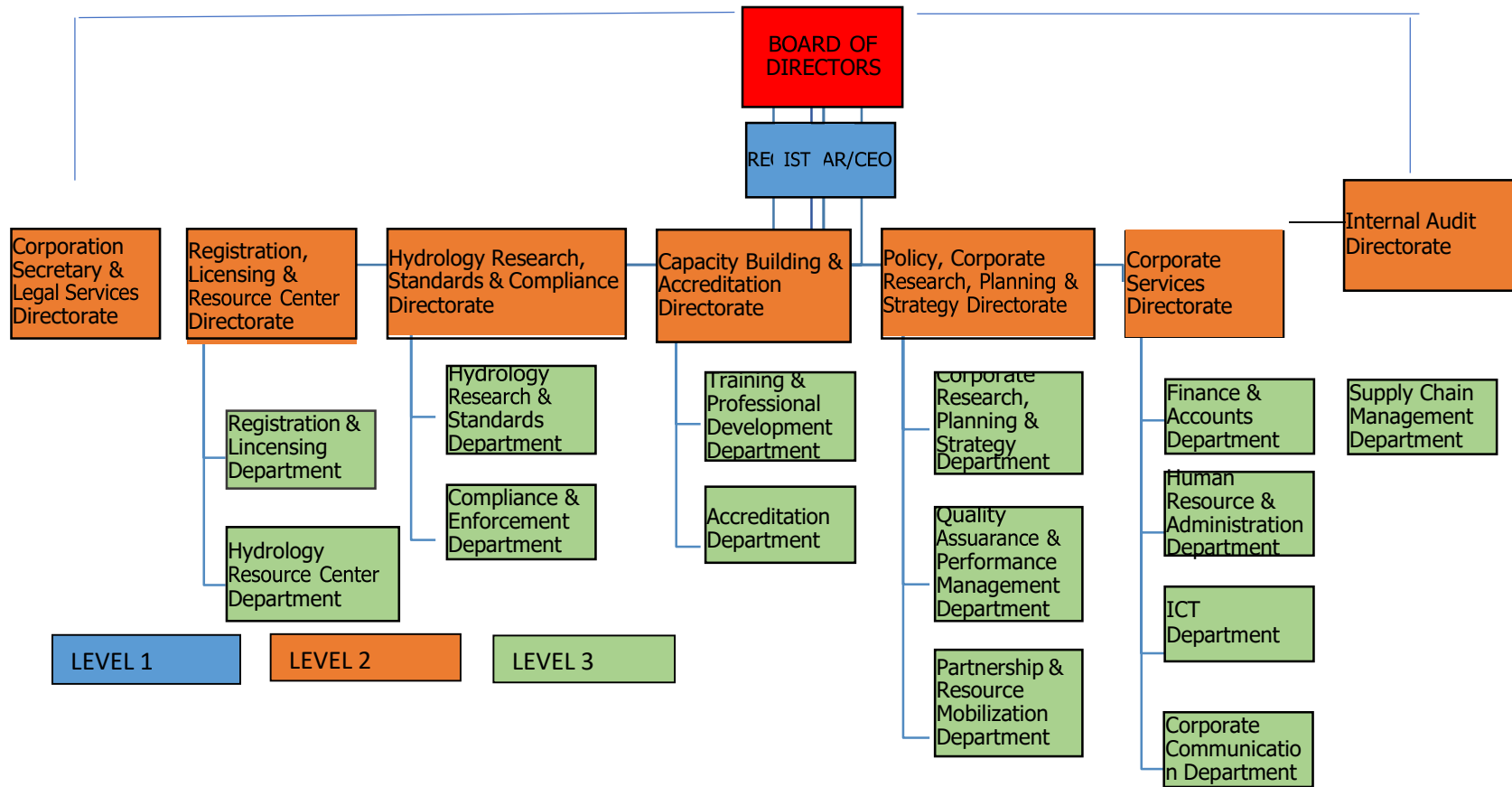
## **Review of the Strategic Plan**

Mid-term and end-term reviews of the Strategic Plan will be undertaken to find out if targets are being met. In case the targets are not being met, corrective action will be undertaken. The end-term review of the current Strategic Plan 2022-2026 will be useful when preparing the next Strategic Plan. A report will be submitted to the Board

highlighting the progress and identifying the targets that were not met and the reasons why. (Reference Annex III).

# ANNEXES

## Annex I: HRB Organization Structure



## Annex II: Implementation Matrix

Strategy	Expected Output	Key performance Indicators	Target for 5 years	Target					Budget (Millions)					Responsibility
				Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	
Strategic Objective: To Coordinate, Regulate and Oversee the Practice of Hydrology Key Result Area: Regulation, Coordination and Overseeing the Practice of Hydrology Expected Outcome: Competent and Skilled Hydrologists														
Operationalize the Hydrologists Regulations, 2022	Hydrologists Regulations are gazetted.	Gazette Notice	1	1	-	-	-	-	6	4	-	-	-	Registrar/CEO
	Database of hydrology professionals developed and updated	Database of hydrology professionals	5	1	1	1	1	1	3	0.5	0.5	0.5	0.5	Director Corporate services
Registration and Licensing hydrologists.	Registered Hydrologists	No. of Registration Certificates	300	100	50	50	50	50	0.5	0.6	0.7	0.8	0.8	Director - Registration, Licensing & Resource Centre
	Licensed hydrologists	No. of Licenses	300	100	50	50	50	50	1	1	1	1	1.2	Registrar/CEO
Development of policies, standards and procedures manuals.	CPD Policy developed	CPD Policy	1	1	-	-	-	-	4	-	1	-	-	Registrar/CEO
	Standards and Operations (SOPs) Manuals	No. of SOPs	3	3	-	-	-	-	1	-	-	-	-	Registrar/CEO

Review the Hydrologists Act, 2017	Hydrologists Act, 2017 amended	Amended Hydrologists Act, 2017	1	-	-	1	-	-	3	3	3	-	-	Registrar/CEO
Monitor and evaluate the level of compliance	Compliant Hydrological Reports	% of Compliance	100	100	100	100	100	100	1	1.2	1.4	1.6	2	Director – Hydrology Research, Standards & Compliance
SUB-TOTAL 1									19.5	10.3	7.6	3.9	4.5	
<b>Strategic Objective: To Coordinate Research, Investigations, and Surveys in the Hydrological Field</b> <b>Key Result Area: Research in Hydrological Services</b> <b>Expected Outcome: Effective coordination of research, investigations and surveys</b>														
Establish an operational office within the Board for coordinating research, investigations and surveys carried out by stakeholders.	Offices operationalized.	No. of offices	3	1	1	1	-	-	10	10	10	-	-	Registrar/CEO
Undertake research studies in the hydrological field.	Two (2) researches undertaken.	No. of researches	3	-	-	1	1	1	-	10	10	10	10	Registrar/ CEO

Hold regional / international conferences.	Knowledge sharing and transfer	Conference report	3	-	-	1	1	1	-	-	15	15	15	Registrar/ CEO
Establish and maintain a linked database of academic, professional and technical works in hydrology	Register/ inventory of the hydrology professionals	No.	1	1	-	-	-	-	5	-	-	-	-	Registrar/ CEO
Establish a professional journal for publishing professional research, investigations and survey carried out in Hydrology	Professional hydrological journal	A journal	1	-	-	1	-	-	1	1.2	1.3	1.5	2	Registrar/ CEO
SUB-TOTAL 2									16	11.2	36.3	26.5	27	
<p>Strategic Objective: To certify hydrological studies and reports necessary for the design of hydraulic structures</p> <p>Key Result Area: Certification of hydrological studies and reports for design of hydraulic structures</p> <p>Expected Outcome: Safe and secure hydraulic structures</p>														
Develop Standards for	Standards developed	Hydrologists Manual	1	-	1	-	-	-	7	8	-	-	-	Registrar/ CEO

preparation of Hydrological reports.														
Certify hydrological designs and reports.	Certification of reports done.	No. of reports certified	300	50	50	50	50	100	0.5	0.9	1.2	1.2	1.2	Registrar/ CEO
SUB-TOTAL 3									7.5	8.9	1.2	1.2	1.2	
Strategic Objective: To partner with 5 institutions in research, training and resource mobilization Key Result Area: Partnership and Resource mobilization Expected Outcome: A financially sustainable institution														
Enter into memoranda of understanding with 5 institutions.	MoUs	No. of MoUs	5	1	1	1	1	1	1	1	1	1	1	Registrar/ CEO
Mobilize Ksh. 200 million from the exchequer	Ksh 200 million secured from Treasury	Amount in Ksh (Mn)	200	30	50	60	70	80	1	1	1	1	1	Registrar/ CEO
Mobilize Ksh. 100 million from partners.	Ksh 100 million secured from Partners	Amount in Ksh (Mn)	100	10	10	20	30	30	1	1	1	1	1	Registrar/ CEO
Collect revenue through A-I-A	Ksh. 26 million from licensing	Amount in Ksh (Mn)	26	1.5	3.5	6	7	8	0.1	0.1	0.1	0.1	0.1	Registrar/ CEO

SUB-TOTAL 4									3.1	3.1	3.1	3.1	3.1	
Strategic Objective: To build institutional capacity														
Key Result Area: Institutional Development and Capacity Building														
Expected Outcome: A developed institution														
Acquire office space, equipment and vehicles.	Office space procured	Lease documents	1	1	-	-	-	-	10	10	10	10	10	Registrar/ CEO
	Office space partitioned and furnished	% of office portioned and furnished	100	20	20	20	20	20	10	10	5	1	1	
	Vehicles procured	No. of vehicles	5	1	1	1	1	1	15	15	15	15	15	Registrar/CEO
Implementing Human Resource Instruments	Staff employed	No. of staff employed	78	20	20	20	10	8	11	18	22	22	22	Registrar/CEO & The Board
	Staff Trained	No. of staff trained	48	8	10	10	10	10	5	8	10	10	10	Registrar/CEO
	Board members trained	% of Board members trained	100	100	100	100	100	100	3	3	3	3	3	
Corporate Image and Branding	Stakeholders sensitised	Percentage level of awareness	100	100	100	100	100	100	2	2	2	2	2	
	Service Charter developed	Approved Service Charter	1	1	-	-	-	-	1	-	-	-	-	
Developing and Integrating ICT	Computers procured	No. of computers	20	10	10	-	-	-	1.5	1.5	-	-	-	



system in Boards operations	ICT Security systems established	No. of software installed and updated	20	5	5	5	5	-	0.5	0.5	0.5	0.5	0.5	
	Procurement and Installation of Servers	Server Procured and Installed	1	1	-	-	-	-	10	-	-	-	-	
SUB-TOTAL 5									69	68	67.5	63.5	63.5	
SUB-TOTAL 6									115.1	101.5	115.7	98.2	99.3	
GRAND TOTAL									529.8					

### Annex III: Monitoring and Evaluation Framework

Key Result Area	Outcome	Key Performance Indicator	Baseline (2021)	Target	
				Mid-Term Period Target	End of Plan Period Target
Regulation, Coordination and Overseeing the Practice of hydrology	Competent and Skilled Hydrologists	Level of compliance	0	100	100
Research in Hydrological Services	Effective coordination of research, investigations and surveys	Percentage increase in journal articles	0	10	20
Certification of hydrological studies for design of hydraulic structures	Well-designed hydraulic structures	Percentage increase in compliance with hydrological reports	0	10	20
Partnerships and resource mobilisation	Increase number of partnerships for research and training.	Percentage increase in number of partnerships for training and research.	0	5	10
	Financially sustainable institution.	Percentage increase in mobilised resources	0	11	20
Institutional development and Capacity Building	Enhanced human resource capacity	Percentage increase in staff recruited	1	20	50
	Improved work environment	Percentage improvement in work environment	0	20	60
	Enhanced Corporate Image	Level of awareness of the services provided	0	50	100

