



**INKOMATI-USUTHU**

CATCHMENT MANAGEMENT AGENCY

# REVISED STRATEGIC PLAN

For the 2021/22 to 2025/26 financial year

## **VISION**

Sufficient, equitable and quality water resources for all in the  
Inkomati-Usuthu Water Management Area

## **MISSION**

To efficiently manage water resources by empowering our  
stakeholders in our quest to contribute towards transformation  
by promoting equal access to water and protecting the  
environment

## **VALUES**

Integrity

Batho Pele (Stakeholders Orientation)

Accountability

Diversity

Transparency

## **SLOGAN**

“INKOMATI-USUTHU CMA, YOUR PARTNER IN  
WATER MANAGEMENT”

# FOREWORD BY THE MINISTER OF WATER AND SANITATION



**Dear Stakeholder,**

The Catchment Management Agencies are institutions at the cutting edge of natural water resources management in South Africa. An Annual Performance Plan for the 2023/24 planning period does demonstrate how the Inkomati Usuthu Catchment Management Agency aims to continue with protection and enhancement of the natural water resources while also making a socio-economic contribution. The water resources sector has encountered several challenges associated with its external environment, such as the impacts of climate change, water availability and water quality among others, however, the organisation still managed that the spotlight be put on its work in building catchments resilience.

## **Transboundary catchment management**

The integrated catchment management responds to what is important to countries that share common catchments with South Africa to business and communities, including an array of other stakeholders. International collaborations that enable obligations to transboundary partners to be met, such as the Southern Africa Development Community protocols on shared catchment enhances the profile of South Africa in both the Regional Economic Community of Southern Africa and the African continent at large. It is therefore crucial that collaborative efforts be enhanced to continue so that the obligations to transboundary partner countries are met to deliver on the outcomes of transboundary catchment management.

## **Engagement with stakeholders**

A potential for big opportunities can be created if a new societal deal is forged, which is collaborative efforts being entered into between business, communities and Government. Those collaborations within the context of a social compact can enable the country to progress and propel its economic development. The Inkomati Usuthu Catchment Management Agency can play a huge role in those efforts through its

stakeholder engagement efforts by empowerment of communities to not only take care of the water resource, but to overcome the effects of some of the global forces such as climate change. In addition, involvement of business in socio economic development is central by ensuring that it is socially responsible and its activities do not adversely impact the water resources. The social compact will thus be informed by those collaborations among Government, business and communities to ensure that those who are historically disadvantaged are considered in the processes of water allocation reforms and granting of water use licenses.

### **Climate change**

Climate change has not only demonstrated to have an impact on the natural environment but also on the economy. It is expected that for any increase in temperatures beyond 1,5%, the economic impact of such will be blistering on economies, especially those of Sub-Saharan Africa. The impacts will also be most debilitating for countries that are in the Northern part of Africa where agricultural production will be mostly affected. Climate change affects the hydrological cycles, leads to more extreme weather events such as droughts and in a water scarce country similar to South Africa, it leads to rapid growth of water scarcity. There are however opportunities that are provided by the impacts of climate change, to the effect that other economies may emerge out of that, being implementation of penalties for those that are engaged in activities that may be detrimental to water resources. It has therefore never been opportune enough, for the waste water discharge charge system to be implemented in South Africa so that polluters of resources may start paying for the betterment of the water resources.

### **Industrial revolutions**

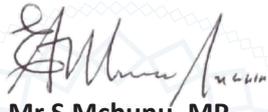
The current technological advances emerged from improvements within multiple persuasions or expertise and/or from a combination of disciplines and inventions that are seemingly disparate. There has also been an emergence of industrial revolutions within the water sector which necessitates further technological investments within the sector. The water sector is still considered as that where there is an under-investment in technology therefore, investments in remote sensing technology, artificial intelligence and big data, among others will usher in an era of effective technology enabled water resource management.

### **Optimisation of service delivery models**

Water service delivery models in the developed world have stabilised, and most of the developing countries are still in the process of service delivery models enhancement. In South Africa, there is an ongoing process of refinement of institutional models for service delivery improvements. Water sector economic regulation and oversight is being enhanced and strengthened to move towards an independent regulation of the water sector. There is an increasing trend towards an independent regulation of the water among the developing world and South African is also moving towards that. Continued establishment of Catchment Management Agencies will also be carried out as strategic institutions in water resources management.

## Conclusion

With the afore-mentioned, I thus wish the Board of the Inkomati Usuthu Catchment Management Agency, its senior management and employees, including its stakeholder community all the success in implementation of the commitments in this Annual Performance Plan. My office, including those of Deputy Ministers, David Mahlobo and Dikeledi Magadzi and the rest of the officials of the Department of Water and Sanitation will always provide the unwavering support to the Inkomati Usuthu Catchment Management Agency.



**Mr S Mchunu, MP**  
**MINISTER OF WATER AND SANITATION**

# FOREWORD BY THE CHAIRPERSON OF THE GOVERNING BOARD



**Dear Stakeholder,**

Allow me on behalf of the Governing Board, to present a strategic plan of the IUCMA for the planning period spanning from the 2022 to 2026 planning period. The plan is presented at a point when the country and the entire globe is facing a structural break, in a form of a COVID-19 pandemic. The pandemic did not impact on the health of individuals, also had adverse impacts on businesses and plunged the global economy into a downward spiral. The South African economy has also been growing at a very slow pace having an impact on the fiscal allocation to the IUCMA meaning that a revenue trajectory must be developed for future financial sustainability of the organisation.

The IUCMA remains steadfast in its commitment to support the Minister of Human Settlements, Water and Sanitation, as the custodian of South Africa's water resources, in the management of the water resources within the Inkomati-Usuthu WMA. As a transboundary WMA, the IUCMA strives to effectively comply with the reserve (ecological and human health needs), international obligations, strategic use (transfers out of the WMA to support Eskom, the Secunda Sasol complex and town of Ermelo), poverty eradication, and to ensure equitable access of the remaining resources to serve the socio-economic benefit of the WMA.

The IUCMA is progressively working in collaboration with government departments and other institutions whose mandates have the potential of impacting on or being impacted by water resources management activities. To this effect, cooperation working agreements (MoUs) are in place with the DWS (Regional Office), the Mpumalanga Tourism and Parks Agency (MTPA), University of Mpumalanga (UMP), South African National Parks (SANParks), Water Research Commission (WRC) and some municipalities.

However, the alignment of the Intergovernmental Relations Framework Act, Act 13 of 2005 (IGR) to include CMAs would go a long way to enhance the recognition and support of the water resources management agenda by all. Although there are strategic relations with local and some provincial spheres of government within Mpumalanga, including the House of Traditional Leaders and the Disaster Management Forums amongst others to tackle inter alia the material water resource pollution challenge, the IUCMA is still not represented at Provincial Administrative Forums that are governed by the IGR. In

the year ahead, these strategic interactions will be pursued to interact more through the Inter-Governmental Relations (IGR) Framework.

The IUCMA actively participates in transboundary water resources management forums/ meetings between the Kingdom of eSwatini, Republic of Mozambique and the Republic of South Africa (i.e., Komati Joint Operations Forums (KJOF); Joint Water Commission (JWC) and Tripartite Technical Committee (TPTC) of the Incomati River Basin). Thus, with the anticipated expansion of the WMA to include Pongola, the IUCMA will fully participate in the Inco-Maputo Basin Water Resources Management. This makes it urgent for the IUCMA to fully participate in the Tripartite Technical Committee (TPTC) as the technical advisor to the DWS on behalf of the Republic of South Africa as a stakeholder engagement imperative.

On behalf of the Governing Board, Chief Executive Officer, Management, and staff, I would like to take this opportunity to thank the Honourable Minister and the Deputy Minister for their confidence and support to implement the aspirations contained in this strategic plan.



**Mr MS Mthembu**  
**CHAIRPERSON OF THE GOVERNING BOARD**

## OFFICIAL SIGN-OFF

It is hereby certified that this Strategic Plan:

- Was developed by management and the Governing Board of the Inkomati-Usuthu Catchment Management Agency under the guidance of Mr S Mchunu MP, the Minister Water and Sanitation;
- Takes into account all relevant policies, legislation and other mandates for which the Inkomati-Usuthu Catchment Management Agency is responsible;
- Accurately reflects the impact and outcomes which the Inkomati-Usuthu Catchment Management Agency will endeavor to achieve over the period 2021/22 to 2025/26.



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Adv MB Shabangu  
Executive: Corporate Services



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Dr T Sawunyama  
Executive: Water Resource Management (*Acting*)



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Ms S Mabunda  
Chief Financial Officer



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Mr LC Mohalaba  
Chief Executive Officer



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Mr MS Mthembu  
Chairperson of the Governing Board

Approved by:

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Mr S Mchunu MP  
Minister of Water and Sanitation

## ACRONYMS

Agenda 2063	Africa Union, Agenda 2063
CMAs	Catchment Management Agencies
CMS	Catchment Management Strategy
DEA	Department of Environmental Affairs
DMR	Department of Minerals and Energy
HDIs	Historically Disadvantaged Individuals
HLPW	United Nations further convened a High Level Panel on Water
ICT	Information Communications and Technology
ICT MSP	ICT Master System Plan
IUCMA	Inkomati Usuthu Catchment Management Agency
IWQG	International Water Quality Guideline
MTSF	Medium Term Strategic Framework
NDP	The National Development Plan, 2030
NW&SM	National Water and Sanitation Masterplan
NWA	National Water Act, 1998 (Act 36 of 1998)
NWRS2	National Water Resource Strategy 2
PFMA	Public Finance Management Act, 1998 (Act 1 of 1998)
RQO	Resource Quality Objectives
SADC	Southern Africa Development Community
SDGs	Sustainable Development Goals
TWQG	South African Target Water Quality Guidelines
WMA	Water Management Area
WRC	Water Research Commission

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# PART A: OUR MANDATE

## 1. Legislative and Policy mandates

The legislative environment, policies and frameworks of Government, which among others provides a developmental priorities for the country and the water sector in particular provides a strategic impetus and functioning of the Inkomati Usuthu Catchment Management Agency (IUCMA). Key legislation and policy mandates relevant to functioning and delivery of the IUCMA mandate are as follows:

### 1.1 Constitutional mandate

The Constitution of the Republic of South Africa, 1996 (Act 108 of 1996) as amended, provides through the Bill of Rights that:

- (a) everyone has a right to an environment that is not harmful to their health or well-being;
- (b) to have the environment protected for the benefit of present and future generations through reasonable legislative and other measures that,
  - (i) prevent pollution and ecological degradation;
  - (ii) promote conservation; and
  - (iii) secure ecologically sustainable development and use of national resources while promoting justifiable economic and social development.

### 1.2 Updated Legislative and policy mandates

#### **National Water Act, 1998 (Act 36 of 1998) as amended**

The National Water Act, 1998 (Act 36 of 1998) (NWA) provides for establishment of the IUCMA, which is detailed in Section 78 as a water resource management authority to perform water resource management functions within its Water Management Area (WMA). The NWA further provides a mandate/object of the IUCMA and detail its inherent powers and functions as follows:

- (a) To investigate and advise interested persons on the protection, use, development conservation, management, and control of the water resources in its WMA;
- (b) To develop a Catchment Management Strategy (CMS);
- (c) To coordinate related activities of water uses and the establishment of the water management institutions within its WMA;
- (d) To promote coordination of its implementation with the implementation of any applicable development plan established in terms of the Water Services Act (Act 108 of 1997);
- (e) To promote community participation in the protection, use, development, conservation, management, and control of the water resources in the WMA.

#### **Public Finance Management Act, 1998 (Act 1 of 1998)**

The Public Finance Management Act, 1998 (Act 1 of 1998) (PFMA) regulate financial management in the national government and provincial governments in order to to ensure that all revenue, expenditure, assets and liabilities of those governments are managed efficiently and effectively; to provide for the responsibilities of persons entrusted with financial management in those governments; and to provide for matters connected therewith. The IUCMA is a Public Entity listed in Schedule 3A of the PFMA.

### **National Water Resource Strategy3**

The scope and purpose of the third instalment of the National Water Resource Strategy 3 (NWRS3) provides a vision for the protection and management of water resources to enable equitable and sustainable access to water and sanitation services in support of socio-economic growth and development for the well-being of current and future generations. The NWRS3 aims to enable achievement of this vision through achievement of the following overarching goals:

- o Water and Sanitation supporting development and elimination of poverty and inequality;
- o Water and sanitation contribution to the economy and job creation; and
- o Water that must be protected, used, developed, conserved managed and controlled sustainably and equally.

The institutional landscape required for effective delivery of services then provides a clarion call to the Department of Water and Sanitation (DWS) as a sector leader, associated sector departments such as the Department of Minerals and Energy (DMR), Department of Environmental Affairs (DEA), Catchment Management Agencies (CMAs), Water Boards, Private Sector and other agencies of State to commit to an involvement in developmental water resource management. Further, the NWRS3

### **National Development Plan, 2030**

The National Development Plan, 2030 (NDP) provides an overarching policy framework on a trajectory in dealing with the triple challenges of inequality, unemployment and poverty. The NDP further supports a new societal deal of increased cooperation between Government, business, labour and other social partners for economic growth and development. The NDP further puts an emphasis on investment and development of bulk water including water resources management infrastructure for water conservation and demand management; integrated catchment management and resource protection such that there is water availability for economic sectors to create jobs.

### **National Water and Sanitation Masterplan**

The National Water and Sanitation Masterplan (NW&SM) intends to coalesce water users and all the Water Management Institutions (WMI) to resolve issues on water and sanitation service delivery. The NW&SM is a novel plan that will guide the South African water sector led by the DWS and implemented at the local government level and other sector partners. The plan is intended towards implementation of tangible actions that will have an impact on the management of South Africa water resources and the supply and use of water and sanitation in the country.

### **African Union, Agenda 2063**

Africa Union, Agenda 2063 (Agenda 2063) provides a blueprint and master plan for transformation of Africa into a global powerhouse of the future. It is a strategic framework for the continent that aims to deliver on the goals for inclusive and sustainable development. It serves as a concrete manifestation of the pan-African drive for unity, self-determination, freedom, progress and collective prosperity. South Africa has prioritised its contribution to the development of the continent and in this regard the African Union Agenda 2063 is key. It provides the strategic framework for the socio-economic transformation of the continent and builds on the initiatives for growth and sustainable development. A prosperous Africa

based on inclusive growth and sustainable development is one of Agenda 2063 aspiration and is key to the IUCMA in particular as it places an emphasis on Africa's unique natural endowments, health and protection of its environment and ecosystems with climate resilient economies and communities.

#### **United Nations Sustainable Development Goals**

The Sustainable Development Goals (SDG) are designed to be a blueprint in achievement of sustainable future across the world. The SDGs seeks to address key systematic barriers to sustainable development such as inequality, unsustainable consumption patterns, weak institutional capacity and environmental degradation. The SDGs further seeks to improve quality of water through pollution reduction including to ensure sustainable withdrawals and supply of freshwater to address water scarcity. The United Nations further convened a High Level Panel on Water (HLPW) which made recommendations on how to accelerate progress in achievement of availability and sustainable management of water and sanitation for all and achievement of other multiple SDGs. High level recommendations by the HLPW among others included; understanding, valuing and managing water will provide a foundation for broader integrated water management; integrated approach at local, country and regional levels including building partnerships and international collaboration at the global level.

#### **Southern Africa Development Community Protocol on shared water courses**

This South African Development Community (SADC) Protocol provide institutional mechanisms to achieve the SADC agenda of regional integration and poverty alleviation. This protocol therefore seeks to:

- (a) Promote and facilitate the establishment of shared watercourse agreements and shared watercourse institutions for the management of shared watercourses;
- (b) Advance the sustainable, equitable and reasonable utilization of the shared watercourses;
- (c) Promote a coordinated and integrated environmentally sound development and management of watercourses;
- (d) Promote the harmonization and monitoring of legislation and policies for planning, development, conservation, protection of shared watercourses and allocation of resources thereof; and
- (e) Promote research and technology development, information exchange, capacity building and application of appropriate technologies in shared watercourses management.

#### **Presidential Commission on the Fourth Industrial Revolution**

The Presidential Commission on the Fourth Industrial Revolution (PC4IR) outlined a vision for development of South Africa to involve prosperity, wealth creation, inclusiveness, including being connection and being digitally advanced and smart. Furthermore, development of 4IR systems can help to reach several goals articulated in the South Africa: Vision 2030, specifically those that relate to:

- o Economy and unemployment;
- o Economic infrastructure;
- o Improving Education, training and innovation;
- o Environmental sustainability and resilience;
- o South Africa in the Region and the World; and
- o Transforming human settlements.

The PC4IR further identifies that South Africa's the South African water sector can respond to the opportunities that are provided by the advent and proliferation of technologies that can have it to be effective.

#### **Economic Reconstruction and Recovery Plan**

The Economic Reconstruction and Recovery Plan (ERRP), published by the National Treasury in the midst of the COVID-19 pandemic, is to stimulate equitable and inclusive growth. One of the nine priority interventions the ERRP identified is "green economy interventions". Which can be linked to the water sector as it guarantees the security of water supply, among others. The ERRP states that as part of South Africa's green agenda, private and public buildings will be retrofitted with measures to improve water efficiency. The plan earmarks creation of 1560 new opportunities for facilities maintenance, water and energy efficiency including construction of rural bridges.

#### **1.4 Relevant court rulings**

There are no relevant court rulings that may have an impact on implementation of strategy over the five year planning period.

## PART B: OUR STRATEGIC FOCUS

### 2. Vision

The vision statement of the IUCMA provides a delineation of Stakeholders future aspirations of the organization and a rationale for fortifying a sense of direction for the future. The vision further provides an interpretation of the IUCMA mandate which is derived from the National Water Act, 1998 (Act No 36 of 1998) and a strategic impetus for performance of the organization and is thus:

**“sufficient, equitable and quality water resources for all in the Inkomati Usuthu Water Management Area”**

The vision indicates that the IUCMA aspires to secure availability of water resources for strategic use; facilitate equitable and improved access to water resources in order to achieve empowerment imperatives of South Africa taking into account the empowerment trajectory of Government and provide systems for quality of the resource both upstream and downstream.

### 3. Mission

A mission statement of the IUCMA succinctly describe the identity of the organization, its business and purpose thus:

**“To efficiently manage water resources by empowering stakeholders in our quest to contribute towards transformation by promoting equal access to water and protecting the environment”**

The mission statement is linked to the future aspirations and is grandiloquent in providing a sufficient identity of the IUCMA to the Stakeholders at large.

### 4. Values

The IUCMA has adopted value based norms that will contribute towards effective execution of its strategy, guide pursuit of its mission and vision and are as follows:

Integrity	we intend to manage our business with honesty, reliability and efficiency
Batho pele (Stakeholder orientation)	we are accountable to a myriad of Stakeholders and we will consider their legitimate interests in all we do
Accountability	we will take ownership of and exercise a duty of responsibility in management of Public resources
Diversity	we will systematically and comprehensively create an enabling environment for inclusivity in our operations
Transparency	We will conduct our business with openness and fairness

## 5. Updated Situational analysis

### 5.1 Overview of the Water Management Area

The Inkomati-Usuthu WMA is one of the 9 WMAs in South Africa covering an area of approximately 36 256 km<sup>2</sup> divided by the great escarpment (along the Graskop, Sabie, Nelspruit and Barberton axis) into the western plateau and the sub-tropical Lowveld in the east. The WMA of the IUCMA has 4 main rivers which effectively divide the WMA into Sabie-Sand, Crocodile, Komati and Usuthu sub-catchments. The IUCMA is of a transboundary nature and forms part of the Incomati International River Basin shared between the Republic of Mozambique, the Kingdom of eSwatini and the Republic of South Africa. As a result, the Inkomati- Usuthu WMA has International Obligations, in terms of the quality and quantity of water that flows across to the neighbouring countries. The existing agreements between South Africa, Mozambique and Swaziland are documented in the Tripartite Permanent Technical Committee (TPTC) Interim Agreement between the Republics of Mozambique and South Africa as well as the Kingdom of eSwatini for co-operation on the Protection and sustainable utilisation of the water of the Incomati and Maputo Water Sources.

The characteristics of the WMA are thus:

*Table 1: characteristics of the Water Management Area*

Item	Sabie-Sand	Crocodile	Komati	Usuthu
Area	9 304km <sup>2</sup>	10 446km <sup>2</sup>	8 621km <sup>2</sup>	7 785km <sup>2</sup>
Key economic activities	Forestry, irrigation and eco-tourism	Forestry, irrigation and industry	Inter-basin transfer to supply strategic water for ESKOM, forestry and irrigation.	Inter-basin transfer for supply to Vaal and Komati WMA. Strategic transfer for ESKOM, SASOL Secunda complex, third party users, forestry and irrigation.
Water requirements	Domestic use, irrigation and eco-tourism	Domestic use, irrigation, paper and sugar mills	Domestic use, irrigation, eco-tourism and industry.	Domestic and strategic use, forestry
Water storage infrastructure	Inyaka dam, transfer pipeline from Sabie to Sand catchment, Da Gama	Kwena dam, Witklip, Lomati, Klipkopjes, Primkop and Longmere	Vygeboom and Nooitgedacht dams in upper Komati, Driekoppies dam in low Komati and Maguga dam in Swaziland.	Heyshope, Jericho, Morgenstond and Westoe

The Inkomati Usuthu WMA is characterised by large transfers into the Vaal system and the Olifants WMA for strategic use such as water supply to SASOL Secunda complex and ESKOM power stations. Inter-basin transfers also occur through a complex water supply system of dams, pumping schemes, diversion weirs, canals, pipelines including inter-basin water transfer schemes. Most of the water from the Upper Komati and Usuthu catchment is of strategic importance as it is utilised power generation. Land use within the WMA is largely by irrigated agriculture from commercial and emerging farmers; extensive afforestation; urban, rural and industrial users including international and ecological water requirements.

## 5.2 External environment

Based on the situational analysis, the IUCMA has identified thematic areas that will serve as a framework to organise an external environment analysis as follows:

### 5.2.1 Climate change

Climate change is one of the powerful global forces inspiring a new business narrative as it may destabilise markets and curb economic growth. Weather patterns are increasingly becoming less favourable, the frequency or severity of extreme events is increasing as temperatures are projected to continue rising with rainfall patterns expected to shift. Those climate change phenomena has blistering effects on the global water resources and the South African water resources are not an exception. Africa is one of the regions largely exposed to climate change with Southern Africa already disproportionately affected by its impacts, which has made agricultural developments in Africa more challenging. Climate change does not only have adverse impacts on agricultural productions but will have debilitating impacts on economies as the South African economy is largely dependent on agriculture, the sector which is the highest water user.

Agreements as per the Paris Accord and was to keep the temperatures to increase by 1,5% which could potentially lessen the GDP losses of countries. If there countervailing actions to reduce emissions are not implemented in South Africa, temperatures could increase by 4% to the year 2100 resulting in increased potential GDP losses of 3,4%.

### 5.2.2 State of the water resources and services

Sustainability of ecosystems, communities and economic activities depends on the continued availability and accessibility to water sources which are obtained through rainfall (precipitation), surface flow (rivers) and groundwater. Availability of water from the catchments is a global phenomenon which continues to be at risk due to water scarcity. Almost more than half of the world population and most of the grain production will be at risk of water stress by 2050. Water scarcity is exacerbated by factors such as climate change, as reflected above, which affects the hydrologic cycles leading to extreme weather events such as droughts having adverse impacts such as salination of surface waters and groundwater aquifers.

Increasing water demand due to rapid urbanisation, population growth, declining water quality, irrigation for food security and industrial use impacts adversely on available water resources. South Africa is generally well-endowed with water resources infrastructure and is highly dependent on it to maintain reliable water supplies. Water resources and water services infrastructure in South Africa is relatively well

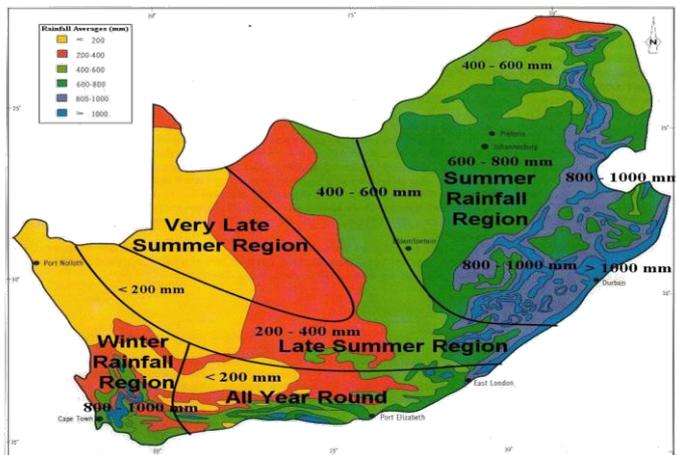
developed, with approximately 4 395 registered dams and a storage capacity of approximately 31 million m<sup>3</sup> with almost 20% provisioned for the ecological reserve.

The South African water resources and services sector are without challenges which can be summarised as follows:

- In the year 2030, the water deficit could be between 2,7 and 3,8 billion m<sup>3</sup> /annum, which is a gap of about 17% of available surface and ground water;
- South Africa average use of water is approximately 235 l/c/d which is above a global average of 173 l/c/d;
- Water losses are exceptionally high with non-revenue water estimated at 41%;
- The capacity of Water Services Authorities (WSA) to operate Waste-Water Treatment Works (WWTWs) is inadequate thus, 56% of those are in a poor and critical state, when 44% are in a poor or critical condition when 11% are dysfunctional;
- 5,3 million households do not have access to reliable drinking water; and
- There is a R33billion water infrastructure funding gap.

South Africa is a water scarce country with a net negative precipitation index made up of low rainfall, high evaporation and uneven rainfall distribution thus pressure on the water resources is mounting. The mean average rainfall is 500mm compared to the global average of 860mm with 65% of the country receiving less than 500mm and 21% receiving less than 200mm. Water resources are impacted by severe and prolonged droughts wherein 25% are drained by perennial rivers and 75% by seasonal to episodic rivers which is depicted below:

Figure 1: mean average rainfall



### 5.2.3 Water availability in the Water Management Area

The WMA is characterised by seasonality of rainfalls thus, wet summers and dry winters which is variable over longer periods with changes in rainfall seen on a yearly basis and at longer time scales. Most of the water demand is in the lower, drier, and hotter parts of the WMA where there is little rainfall and runoff. These factors create complexity and an unstable situation for the economy of the region, which is reliant on the availability of water and makes the proper management of the river flows very important. Generally, demand of water in the WMA, generally exceed supply.

Emerging trends with regards to water availability are as follows:

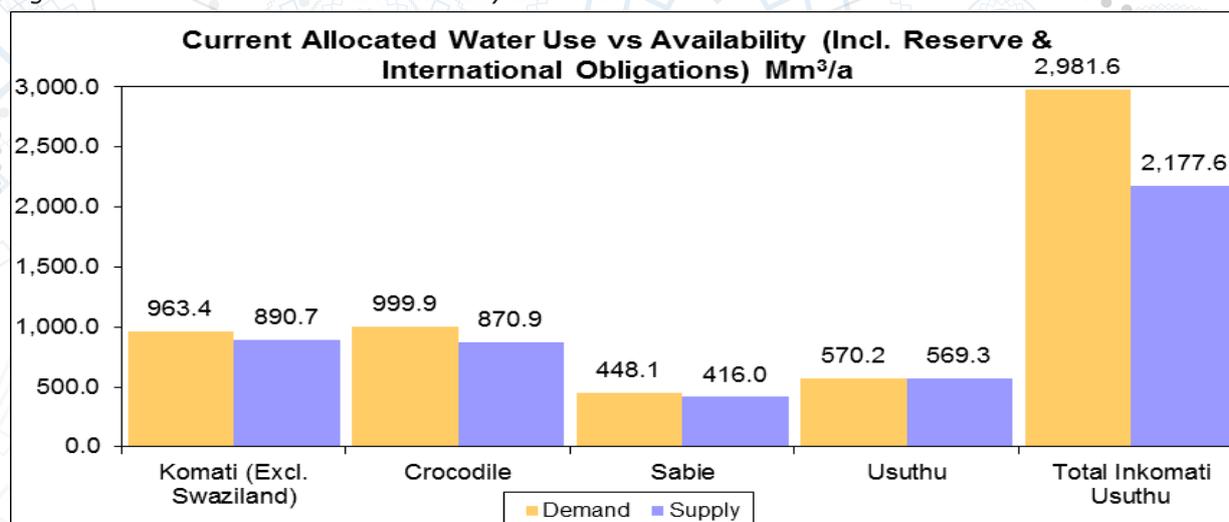
- There is a need for allocation plans, considering both water resources infrastructure development and demand management;
- Promotion of water use efficiency, particularly in stressed catchments;
- Increase assurance of supply to existing users and/or make water available to new water users;
- Implement adaptation strategies for water resource resilience to population growth and climate change.

#### 5.2.3.1 Surface water availability in the WMA

Availability of water from the rivers is generally less than the demand to enable both a sustainable economy and resource. This level of stress is dependent on the level of risk that water users are willing to accept. The implementation of the Reserve, which is an amount of water that must remain in the rivers to enable sustainability in the catchment and for basic human needs, will increase this level of stress and the NWA prioritises the Reserve. The WMA and the resource generally is dynamic and despite the overall state of water stress in the WMA, there is still potential for increased yield and economic development in some areas of the catchments based on reconciliation strategies done for major towns by the Department of Water and Sanitation (DWS). The main source of water is from key major dams as reflected in Table 1 above.

The needs of various sectors including the ecological reserve has a total volumetric requirements of 2 981Mm<sup>3</sup> and a supply of 2 177 Mm<sup>3</sup>. The prevailing trend, of volumetric requirements exceeding supply is pervasive in all the sub-catchments of the IUCMA. The graphical depiction of the demand and supply dynamics is below:

Figure 2: Current demand and availability



### 5.3.2.2 Ground water availability in the WMA

Levels of *groundwater* within the WMA has been declining over the years at a rate which is more than that which it can be replenished. Since 2006, the groundwater potential of the IUCMA is as follows:

- o The Crocodile catchment dropped by 142 million m<sup>3</sup>/annum from a resource potential of 707 million m<sup>3</sup>/annum to an available yield of 566 million m<sup>3</sup>/annum;
- o The Sabie Sand catchment dropped by 678 million m<sup>3</sup>/annum from a resource potential of 682 million m<sup>3</sup>/annum to an available yield of 4 million m<sup>3</sup>/annum; and
- o The Komati catchment dropped by 79 million m<sup>3</sup>/annum from a resource potential of 944 million m<sup>3</sup>/annum to an available yield of 865 million m<sup>3</sup>/annum.

### 5.3.4 Water Quality in the WMA

*Quality of water* within the WMA is determined through compliance of the resource quality in terms of criteria set through:

- o Resource Quality Objectives (RQO) of the IUCMA;
- o South African Target Water Quality Guidelines (TWQG); and
- o International Water Quality Guideline (IWQG) in order to determine conformance with obligations contained in the tri-partite agreement among the Kingdom of Eswatini, Mozambique and South Africa.

Generally, surface water in the WMA complied with the RQO, TWQG and the IWQG however, quality concerns were identified in the following areas:

- o High levels of *E.coli* mainly in Sabie and Crocodile catchments;
- o Phosphate concentration in Usuthu and Komati catchments; and
- o Electrical conductivity mainly in Komati and Crocodile catchments.

The quality concerns could be attributable to the following:

- Pollution that emanates from human or animal faecal materials;
- Existing and defunct mining activities; and
- WWTWs effluent discharge; and
- Raw water sewer overflowing manholes.

### 5.3.5 Industrial Revolutions in the Water Sector

The Fourth Industrial Revolution (4IR) involves a range of new technologies and new forms of connection between various economic actors, with information and communication technology (ICT), digitisation being particularly critical to the 4IR. Technologies related to the 4IR are disruptive to the traditional business models, having the 4IR being one of the global forces that are inspiring a new narrative in doing business. When the traditional business models involved customer-to-business type of a relations, the 4IR technologies enhances development of new industries and online platforms that enable customer-to-customer exchange.

In addition to the 4IR, the water sector is undergoing its own fourth revolutions, which involves establishing water conservation strategies and transitioning toward closing water loops. While the academic and industrial water sectors are advancing towards consolidation of the 4IR, another revolution concerning big data and artificial intelligence (AI) has recently emerged in all societal sectors, with the water sector included.

It is estimated that 80% and 50% of utilities in the developed and developing worlds respectively, are expected to undergo digital transformation by 2025 meaning that fast advances in affordable sensors, high-resolution remote sensing, communication technologies, and social media are contributing to the proliferation of big data in the water sector and are likely transforming traditional decision-making strategies. Big data analytics together with AI are set to bring new opportunities and challenges into the water sector which may have policy and labour outcomes. The combination of AI with big data science, with new ways to analyse, organize, and extract information from large volumes of varying types of data, is bringing new opportunities for data-driven discoveries.

### 5.1.3 Cross boundary water management

Worldwide, more than 286 rivers and about 600 aquifers cross sovereign borders when 40% of the world population live within those shared river basins having transboundary water governance as essential. Without transboundary water cooperation, inclusive sustainable development can be severely curtailed with potential threats to economic integration and development. The SADC protocol on shared water courses provide an overarching framework for the required institutional mechanisms in management of shared water courses and fostering of transboundary water cooperation.

The Sabie, Crocodile, Komati, and Usuthu rivers flow into Swaziland and Mozambique. As a result, international treaties and committees have been established on these rivers to control the use of water by the three countries. These treaties set limits to the amount of water that South Africa may utilise out of the rivers as well as the amount of water that the countries are obliged to release downstream. South

Africa, and hence the IUCMA is obliged to operate within these international treaties, currently operating the rivers to meet the Piggs Peak Agreement which requires a minimum flow of 2 cumecs from the rivers of the Inkomati Catchment across the Mozambican border at Ressano Garcia. This has been replaced with more sophisticated flow pattern requirements of the newer Interim IncoMaputo Agreement (IIMA) which has a higher minimum flow requirement of 2.6 cumecs for ecological purposes and a further amount for downstream demands. South Africa, and hence the IUCMA is obliged to operate within these international treaties and create harmonized monitoring mechanisms, compatible assessment methods, data management systems, and uniform reporting procedures.

#### 5.1.5 The economic environment

The global economic growth is sluggish with the global GDP stagnating in the second quarter of 2022. High inflation is also persisting for longer than expected, exacerbated by the lingering impacts of the COVID-19 pandemic. These adverse effects resulted in slowed expansion momentum wherein the World Bank revised its global growth projections. The world GDP is expected to grow by 3% in 2023 and the worldwide global output in trade volumes is expected to grow by 4,3%.

Similar to the global economic outlook, South Africa GDP growth remains constrained and worsened in the second quarter of the 2022 year albeit the economic growth started on a steady recovery path in the beginning of 2022. Adverse international developments contributed to the deterioration in the economic growth with the outlook remaining weaker with the GDP growth outlook of 1,4%.

Inflation has been at a decade high in most economies, having some of the developed economies announcing packages to countervail the rising inflation. High inflation will continue to put an upward pressure on prices, mainly of food and energy. Although, it is expected that those inflationary pressures will ease in 2023 as some of the underlying factors seems to be subsiding, particularly the reduced disruptions to global supply value chains which precipitated an initial spike in price increases. Inflationary pressures have been on the increase in South Africa, leading to a high inflation trajectory.

Interest rates has been on the rise globally as central Banks across the world have tightened monetary policies in response to inflation levels and the South African Reserve Bank followed suit. The interest rates outlook will continue to be dependent on the international factors, monetary policy stances of central banks in major economies and inflation. The inflation outlook will continue to be within the inflation target of 6% and steadies at 5,3% in 2023.

## 5.2 Internal environment

Pursuit and success in execution of the strategy of the IUCMA can be achieved when the organisation has built the required strategic resources and capabilities. Those resources and capabilities that are a basis for successful strategy execution must be ready for deployment for effective functioning of the IUCMA.

### 5.2.1 Resourcing of the mandate

The South African economy has been growing at a very sluggish pace over the previous number of years. The economy is expected to slightly grow due to a fiscal policy and monetary policy stances and the stimulus packages that were announced by the Government. Possibility is that through the fiscal policy, the allocation to the IUCMA may reduce over the years, having the organisation to largely espouse commercial principles of its revenue being derived from the water resource management charges. The current funding model is that allocation from the fiscus makes up 64% of the total IUCMA annual budget when 36% is collection of water resource management charges. This funding model is sub-optimal and will not be sustainable in a long term therefore, a strategically oriented funding framework is required to allow the IUCMA the ability to deliver on its mandate.

### 5.2.2 Organisational culture

The organisational culture of the IUCMA is complex, the organisations may find it difficult to define and communicate a consistent message of the prevailing culture. A complex organisational culture will thus require multidisciplinary interventions such that is matched to the requirements of the strategy delivery and execution effort. A healthy culture that embraces execution-supportive attitudes, behaviours and work practises where a results oriented work climate is encouraged is espoused. This type of culture will enable alignment of rewards and incentives directly to achievement of strategic outcomes.

### 5.2.3 Information and Communication Technology

The Information Communications and Technology (ICT) environment within the IUCMA has been identified as an area that requires attention. An assessment of the ICT control environment has been performed which has revealed that an enterprise architecture of the IUCMA needs to be assessed and defined. The enterprise architecture will allow an assessment of the current status and the desired state of the following components:

- Applications architecture;
- Databases architecture;
- Technology architecture; and
- The ICT business area.

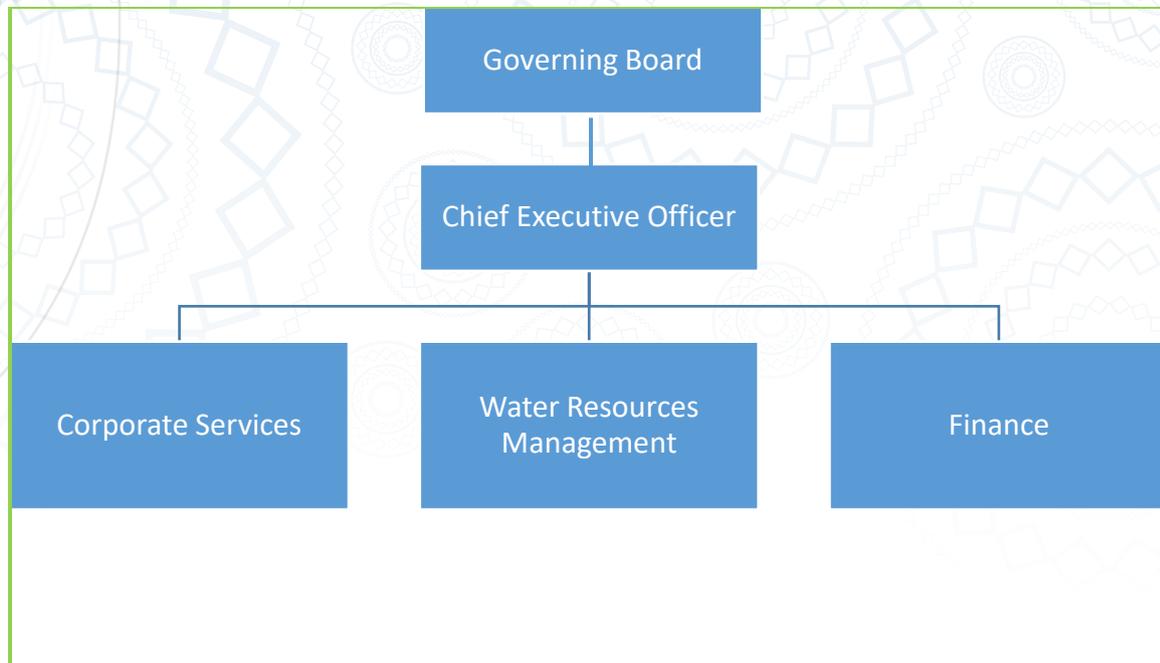
A Control Objectives for Information and related Technologies (COBIT) assessment has been performed and identified governance areas that needs enhancement. In addition to the COBIT assessment that was performed, a roadmap has been developed to implement ICT projects that will enable the IUCMA to embark on a digital transformation strategy in the future.

### 5.3 High level organizational structure

The organisational structure has recently been re-organised to enable it to be fit-for-purpose and supportive towards effective strategy execution.

A high level organisational structure is as follows:

Figure 3: high level organisational structure



## PART C: MEASURING OUR PERFORMANCE

### 6. Institutional Performance Information

#### 6.1 Measuring the impact

The impact statement is derived and seeks to portray the change that the IUCMA intends to make at the end of the planning as thus:

#### **National development and transformation advanced through protected water resources**

The impact of protected water resources in development can be seen in the strategic use of water for economic development in advancement of the national aspirations to reduce poverty, unemployment and inequalities. The impact on transformation is of a socio-economic nature with equitable allocations

of water for the benefit of Historically Disadvantaged Individuals (HDIs) to redress past imbalances and in-equitable allocation of water.

In execution of strategy, the IUCMA will consider alignment to the following priorities of the Medium Term Strategic Framework: 2019 to 2024 (MTSF:2024):

- Priority 1: Capable, Ethical and Developmental State
- Priority 2: Economic Transformation and Job Creation
- Priority 3: Education, Skills and Health
- Priority 4: Consolidating the Social Wage through Reliable and Quality Basic Services
- Priority 5: Spatial Integration, Human Settlements and Local Government
- Priority 6: Social Cohesion and Safer Communities
- Priority 7: A Better Africa and World

The IUCMA activities and outcomes align with the MTSF priorities and the DWS outcomes as follows:

*Table 2: Alignment of goals, priorities and outcomes*

<b>SDG Goals</b>	<b>MTSF priorities</b>	<b>DWS outcomes</b>	<b>IUCMA outcomes</b>
Goal 6: Ensure availability and sustainable management of water and sanitation for all	Priority 1: Capable, ethical and Developmental State	Outcome 1: Efficient, effective and development orientated department	Outcome 1: increased stakeholder satisfaction
	Priority 7: A better Africa and World		Outcome 2: Enhanced human resources and business capabilities
	Priority 5: Spatial Integration, Human Settlements and Local Government	Outcome 2: Ecological infrastructure protected and restored	Outcome 3: Maintain financial sustainability
	Priority 7: A better Africa and World	Outcome 3: Water demand reduced and water supply increased	Outcome 4: Protected water resources

## 6.2 Measuring the outcomes

Through alignment of the IUCMA outcomes to the MTSF and the DWS strategic outcomes, policies and implementation plans, Standard Operating Procedures (SoPs) and Manuals will be developed. The internal controls will be assessed through the internal audit processes within the framework of combined assurance. Monthly and quarterly (statutory) reporting will be effected and management actions will be parlayed for achievement of the outcomes and deliverables as set out below:

Table 3: Outcomes, indicators and targets

Outcome	Outcome indicator	Baseline	Five-year target
Outcome 1: Increased stakeholder satisfaction	Satisfaction levels perceived by Stakeholders	Employee satisfactory survey recommendations and report were produced	Improved stakeholder satisfaction levels
	Empowered workforce	Approved human resource strategy	Implemented human resource strategy
	ICT enabled and digitally transformed organisation	ICT strategy developed	Implemented ICT strategy
		COBIT assessment conducted	Gaps identified on the COBIT assessment addressed
Outcome 3: Maintain financial sustainability	Percent of revenue generated from resource management levies to total revenue	34%	40%
	Resource Quality (Quality, Quantity and BIOTA) status	Annual resource quality status report	5-year resource quality status report
	Existing lawful water use	Lower Komati – 79,7% Crocodile – 74,3% Sabie Sand – 50,6%	Lower Komati – 100% Crocodile – 100% Sabie Sand – 100%

	Recrafted
	New Indicator
	Removed

### 6.3 Explanation of planned performance over the five-year period

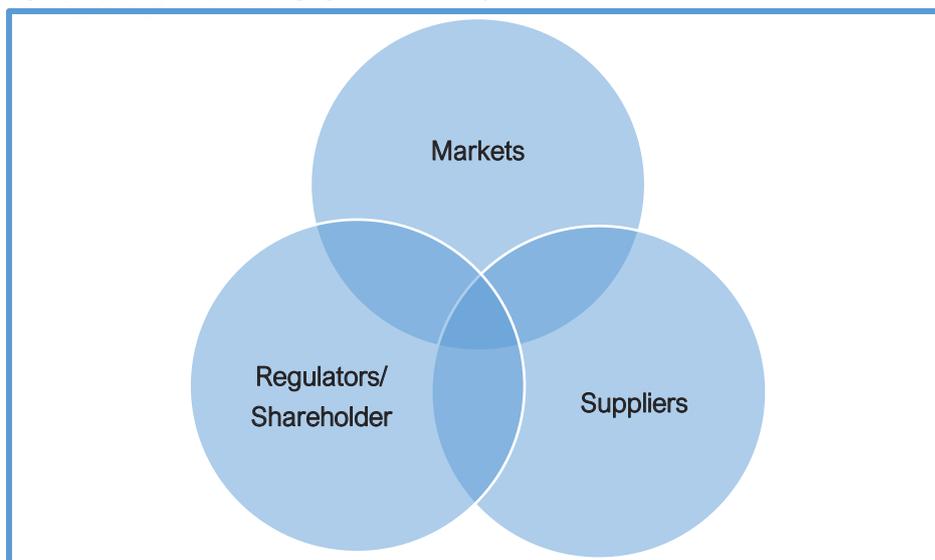
In order to provide an outline of planned performance over the five year period, the strategic intents were organised in order to respond to the threats posed and opportunities created by the external environment within which the entity operates. Cognisance was also placed unto the organisational key weaknesses and leverage on the strengths to enable effective strategic execution. The following areas of performance per outcome were thus identified:

#### **Outcome 1: Increased stakeholder satisfaction**

Enhancement of partnerships with Stakeholders will be effected in order to support strategy execution and manage reputational risks. Stakeholders will be profiled considering their extent of influence on the operations of the IUCMA and material issues of engagement with such stakeholders will be identified. Strategy is a transformative process and understanding stakeholder legitimate and reasonable needs will enable their inclusivity in that transformative process. The developmental role that the IUMCA fulfils is primarily a social and an economic one. Contribution towards fulfilment of future societal needs without compromising the current one within the context of three inter-dependent systems of economy, society and the natural environment is therefore crucial.

The stakeholder engagement framework of the IUCMA will therefore be management through a process of identification and organising stakeholders into the following three crucibles:

*Figure 4: Stakeholder engagement classification*



The stakeholder engagement process of the IUCMA will intend to enable the organisation to organise itself against the socio-economic impacts. In this instance, the material issues of engagement with stakeholders will be identified and used as a basis to develop stakeholder value proposition where value addition inputs, activities and outputs will be identified.

## **Outcome 2: Enhanced human resources and business capabilities**

The potential for excellence in mandate delivery by the IUCMA should be enhanced by how the organisation orchestrate its resources. Its structures must be strengthened to enhance delivery in core operational mandate area of water resources management, including the support core areas. The HR value proposition of the IUCMA seeks to place the human capital processes at the centre of strategy execution process and appreciate how different elements of the human resources planning fits together to create meaning and value for the IUCMA. The key themes and focus area proposed by the strategy are as follows:

- HR assurance and wellness;
- Human resources systems and technological administration and reporting systems;
- People management competence and learning;
- Organisational culture development and effectiveness; and
- Employee relations management.

The HR value chain has been totally defined, which will enable the movement towards strategic workforce human resources management and enable a total alignment of human resources management practises to the strategy.

The advent of the fourth Industrial Revolution, the internet of things has shown a great potential in enabling smart irrigation, water quality control, remote sensing equipment and early warning systems. The internet of things when coupled with computing capacity can allow for development of complex models for effective water resource management. The IUCMA will assess and understand the implications of innovation in a water resource management context and bring about specific initiatives to promote water related innovation and knowledge management.

## **Outcome 3: Maintain financial sustainability**

The current revenue trajectory of the organisation is not sustainable however, a plan to optimise the revenue and resource allocation cycles of the IUCMA will be continuously reviewed and enhanced to set the IUCMA on a sustainable revenue trajectory. The revenue enhancement plan will have water resources management, efficient use and regulation as its core to also enable sustainable delivery of the IUCMA mandate. Further, key business processes will be identified to strengthen the policy environment in each of those key process areas.

## **Outcome 4: Protection and use of water resources**

Availability of water within the WMA is a serious challenge and is a powerful force that requires attention. This is affected by a number of factors such as climate change which has sever impacts such as extreme events and drought wherein the water resources are diminished at a rate that is more than at which it can be replenished. Quality of water in the resources is also a concern and requires strengthening of compliance measures. The IUCMA has to comply with the Reserve (the NWA includes ecological and human health requirements) but mostly comply with the inter-basin transfers, strategic use, international obligations and Resource Quality/Quantity Objectives.

## 7. Key risks

The approach to risk management assumed an integrated Enterprise Wide Risk Management which incorporates internal controls into the entire risk management process. The risk management process is premised on a notion that the IUCMA provides value to its Stakeholders so that the IUCMA can be able to effectively deal with uncertainty, associated risks and opportunities. Risks identified will enable the IUCMA to effectively mitigate against any events that may impede achievement of the IUCMA strategy.

Table 4: strategic risks and mitigation actions

OUTCOME	STRATEGIC RISK	RISK MITIGATION
Outcome 1: Increased stakeholder satisfaction	Stakeholder dissatisfaction (Lack of understanding of the IUCMA mandate by stakeholders)	Review and evaluate the Stakeholder Engagement Plan.  Implement an effective communication plan.
Outcome 2: Enhanced human resources and business capabilities.	Skills and capabilities (Failure to attract and retain skilled employees)	Develop and implement Strategic Human Resource Plan.
	Unsustainable ICT systems (Loss of data, Cyber security, Lack of autonomy over critical systems)	Implementation of ICT strategy and COBIT gap analysis recommendations.
Outcome 3: Maintain financial sustainability	Unsustainable financial resources. (Inability to meet short- and long-term commitments)	Approval and implementation of an effective revenue enhancement strategy.
Outcome 4: Protection and use of water resources	Water quality (deteriorating resource quality and availability of water resources)	Develop and implement the resource quality strategy. Implement water conservation and demand management measures including water use efficiency

## PART D: TECHNICAL INDICATOR DESCRIPTIONS

### Outcome 1: Increased stakeholder satisfaction

Indicator title	Satisfaction levels perceived by Stakeholders
Definition	The indicator measures the levels of stakeholder perceptions about the organisation for effective strategy execution
Source of data	Stakeholder satisfaction surveys
Method of calculation or assessment	Performance of this indicator will be assessed in a qualitative manner
Assumptions	Reliable records management of stakeholder perceptions
Disaggregation of beneficiaries (where applicable)	Not applicable
Spatial transformation (where applicable)	Not applicable
Desired performance	Performance higher than expectations is desirable
Indicator responsibility	Executive Manager: Water Resources Management

Indicator title	ICT enabled and digitally transformed organisation
Definition	The indicator measures the trajectory towards implementation of the ICT strategy by the IUCMA. The indicator will also measure if the ICUMA has addressed the gaps identified in the COBIT and the enterprise architecture assessments.
Source of data	ICT strategy implementation reports
Method of calculation or assessment	Performance of this indicator will be assessed in a qualitative manner
Assumptions	There will be reliable records showing implementation of the ICT strategy
Disaggregation of beneficiaries (where applicable)	Not applicable
Spatial transformation (where applicable)	Not applicable
Desired performance	Performance higher than expectations is desirable
Indicator responsibility	Executive Manager: Corporate Services

## Outcome 2: Enhanced human resources capabilities

INDICATOR TITLE	PERCENTAGE IMPLEMENTATION OF A HUMAN RESOURCE IMPLEMENTATION PLAN
Definition	To depict that the organisation implemented planned deliverables set out in the human resource plan of the IUCMA
Source of data	Records showing achievement of human resource plan deliverables
Method of calculation or assessment	Performance of this indicator will be calculated in a quantitative manner $y = a/b * 100$ where: y is the percent actual implementation of the plan a is total number of planned activities achieved b is total number of planned activities
Assumptions	Reliable records of communication activities
Disaggregation of beneficiaries (where applicable)	Not applicable
Spatial transformation (where applicable)	Not applicable
Calculation type	Cumulative on a quarterly basis
Reporting cycle	Quarterly
Desired performance	Performance higher than expectations is desirable
Indicator responsibility	Executive Manager: Corporate Services

### Outcome 3: Maintain financial sustainability

<b>Indicator title</b>	<b>Percent of revenue generated from resource management levies to total revenue</b>
Definition	The indicator measures the revenue generation capacity of the IUCMA towards a financial trajectory that will enable sustainability of operations
Source of data	Data will be collected from the financial system
Method of calculation or assessment	<p>Performance will be calculated quantitatively</p> $y = a / (a + b) * 100$ <p>Where:</p> <p>y is percent of revenue generated from resource management levies to total revenue</p> <p>a is revenue generated from resource management levies during the financial year of the IUCMA</p> <p>b is revenue generated through allocations from the national fiscus during the financial year of the IUCMA</p>
Assumptions	All the customers that are supposed to be billed
Disaggregation of beneficiaries (where applicable)	Not applicable
Spatial transformation (where applicable)	Not applicable
Desired performance	Performance higher than expectations is desirable
Indicator responsibility	Chief Financial Officer

#### Outcome 4: Protection and use of water resources

INDICATOR TITLE	RESOURCE QUALITY STATUS REPORT
Definition	The indicator measures the capacity of the organisation to report on the resource quality status (quality, quantity, biota) in the water management area
Source of data	Quarterly and annual reports on Resource quality status
Method of calculation or assessment	Performance of this indicator will be calculated in a qualitative manner: 4x quarterly reports 1x annual report
Assumptions	Reliable resource quality status reports produced
Disaggregation of beneficiaries (where applicable)	Not applicable
Spatial transformation (where applicable)	Not applicable
Calculation type	Cumulative on a quarterly basis
Reporting cycle	Quarterly
Desired performance	Performance higher than expectations is desirable

Indicator title	Existing lawful use
Definition	The indicator measures the reliability of data on the lawful use of water in the resources in the selected catchment areas
Source of data	WARMS data
Method of calculation or assessment	Performance of this indicator will be calculated quantitatively as such:  $Y = a/b * 100$ <p>Where y is the existing lawful use, a is the verified users b is the validated users</p>
Assumptions	Reliable information from the WARMS system
Disaggregation of beneficiaries (where applicable)	Not applicable
Spatial transformation (where applicable)	Not applicable
Desired performance	Performance to the set target is desired
Indicator responsibility	Executive: Water Resource Management







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# REVISED STRATEGIC PLAN

For the 2021/22 to 2025/26 financial year



QR CODE  
FOR THE  
IUCMA  
WEBSITE