

# WATER NEWS

2024/25 1st EDITION



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**INKOMATI-USUTHU**  
CATCHMENT MANAGEMENT AGENCY



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# 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:

“Inkomatil-Usuthu CMA, Your Partner in Water Management”

## Meet the Editorial Team



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# INKOMATI-USUTHU WATER MANAGEMENT AREA MAP



## Legend

### Inkomati Usuthu WMA

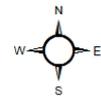
#### Catchment

- Sabie/Sand
- Crocodile
- Komati
- Usuthu

#### Rivers\_Order

- 1
- 2
- 3

- Towns
- Local\_Municipality
- International\_borders
- Kruger\_National\_Park



# MEET THE IUCMA GOVERNING BOARD



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**Board Secretary**

# FOREWORD

BY THE ACTING CEO

ADVOCATE BERNARD SHABANGU

ACTING CHIEF EXECUTIVE OFFICER



## Dear Colleagues Stakeholders

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Welcome to the first edition of the Inkomati-Usuthu Catchment Management Agency (IUCMA) newsletter for the 2024/25 financial year. It is an exciting time as we embark on new projects and continue to build on our past successes.

One of the key highlights of this period is the revised water pricing strategy unveiled by Mr Logan Majola from the Department of Water and Sanitation. This strategy, particularly the waste discharge charge system, represents a significant step towards sustainable water management, ensuring that all water users contribute handsomely to preserving our vital resources.

In line with our commitment to collaborative efforts, we are proud to feature the ongoing work of the Blue Deal Crocodile River Partnership. This initiative continues to make impressive strides in enhancing water quality and sustainability within the Crocodile River system. The partnership's recent successes, such as the completion of Shit Flow Diagrams and the Buddy Twinning Program, highlight the impact of cooperation and shared knowledge.

We also hosted the INCO-MAPUTO GEF 8 Project, a transboundary initiative to strengthen integrated water resource management across the Incomati and Maputo basins. This project underlines our dedication to fostering international cooperation and sustainable water practices.

Our recent hydrological status reports indicate a decrease in water availability since the end of the 2023-24 rainfall season. Continuous monitoring and proactive management are essential to address these challenges and ensure the sustainability of our water resources.

As we move forward, the IUCMA remains steadfast in its mission to promote sustainable water management through innovation and collaboration. We appreciate your continued support and engagement as we strive to achieve a water-secure future for all.

Warm regards,

Adv Bernard Shabangu  
Acting Chief Executive Officer.



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# SOME OF THE DAMS WITHIN THE INKOMATI-USUTHU WATER MANAGEMENT AREA



Located along Crocodile river, the **Kwena Dam** is a combined gravity and arch type boosting a total catchment area of 954 sq.km.

**Injaka Dam** along the Marite river boost a full capacity of 124 mil.cub.m.



The **Jericho Dam** in Mpama river was built in 1966/68 with a full capacity of 59.5 mil.cub.m.



The **Driekoppies Dam** along the Lomati river boost a full capacity of 251 Mm<sup>3</sup> and was opened in 1998.



**Witklip dam** along the Sand river near Sabie was opened in 1969 boosting a full capacity of 12.97 mil.



**Da Gama Dam** was established in 1977 along the Witwaters river and boost a full capacity of 13.58 mil.cub.m.



The **Vygeboom Dam** built in 1969 along the Komati river boost a full capacity of 78 mil.cub.m.



The **Primkop dam** has a total length of 5.88 km



# Editor's Note

## Dear Readers,

Welcome to the first edition of the Inkomati-Usuthu Catchment Management Agency (IUCMA) newsletter for the 2024/25 financial year. This publication aims to keep you informed about the significant developments and initiatives within our agency.

In this edition, we zoom on Mr Matome Mahasha's passionate call to action from the Department of Water and Sanitation. At the Crocodile Stewardship Forum, he emphasised the importance of transforming catchment forums into Catchment Stewardship Forums, as outlined in the National Water Resource Strategy (NWRS 3). This transformation is crucial for enhancing collaboration and ensuring the sustainable management of our water resources.

We also bring you an update on the ecological status of the Usuthu catchment. Our River Ecstatus Monitoring Programme (REMP) has provided valuable insights into the health of our aquatic ecosystems. The results from our recent surveys highlight the need for continued vigilance and proactive measures to maintain the ecological integrity of our rivers.

Another highlight is our comprehensive report on the status of groundwater quantity in the Inkomati-Usuthu WMA. Our monitoring network has revealed critical information about groundwater availability, particularly in the Sabie-Sand and Crocodile catchments. These insights are essential for addressing the challenges of unsustainable groundwater consumption and ensuring the long-term sustainability of our water resources.

Additionally, we cover the status of Control Monitoring and Enforcement (CME) in the Crocodile catchment. Effective CME practices are vital for protecting our water resources from pollution and overuse, ensuring compliance with environmental regulations, and promoting sustainable water use.

Finally, we are excited to share the progress of the Blue Deal Crocodile River Partnership. Their collaborative efforts have led to significant advancements in wastewater treatment and community engagement, reflecting the power of partnership in achieving our goals.

We hope you find this newsletter informative and engaging. Your feedback is invaluable to us, and we look forward to your continued support as we work together to manage and protect our water resources.

Best regards,

Editor.



# UNDERSTANDING THE IMPORTANCE OF WATER TARIFFS FOR SUSTAINABLE WATER RESOURCE MANAGEMENT

As we approach the second quarter of the year, the Inkomati-Usuthu Catchment Management Agency (IUCMA) prepares for our annual water tariff consultation. This essential exercise, taking place every year, is not just a formality, but a vital opportunity for us to engage with all water users, including farmers, municipalities, and businesses. Your active participation is crucial to ensure a transparent and collaborative approach to water resource management. We encourage all stakeholders to join us and gain a deeper appreciation of how water tariffs contribute to the sustainable and equitable management of our vital water resources. This consultation is a key part of our shared responsibility, and we want you to be fully informed and involved.

Water is a vital resource, integral to our daily lives and the backbone of many economic activities. Water is indispensable from the fields of farmers to the taps in our homes and businesses. However, the effective management of this precious resource comes at a cost. At the Inkomati-Usuthu Catchment Management Agency (IUCMA), we strive to ensure that water resources are managed sustainably and equitably. A crucial part of this process is the payment of water tariffs by all water users, including farmers, municipalities, and businesses. Your commitment to paying these tariffs directly impacts the sustainability of our water resources, ensuring they are available for future generations.

## Why Pay Water Tariffs?

### 1. Maintenance and Infrastructure Development

Water tariffs play a crucial role in funding the maintenance and improvement of water infrastructure, including the upkeep of dams, pipelines, and water treatment plants. Without these funds, our water delivery systems would deteriorate, leading to inefficiencies, higher operational costs, and potential water shortages.

Effective water resource management requires continuous monitoring and research. Tariffs support t

hese activities, enabling us to manage water resources sustainably. This ensures that water remains available for future generations and helps maintain the health of our rivers, wetlands, and ecosystems.

### 3. Fair and Equitable Distribution

Water tariffs play a crucial role in ensuring that water is distributed fairly and equitably. We can discourage wasteful practices and promote water conservation by charging for water use. This is particularly important in a water-scarce country like South Africa, where every drop counts. Your contributions through water tariffs are making a real difference in our efforts to ensure that water is used wisely and shared fairly.

### 4. Environmental Protection

Water is a critical part of our environment, and managing it responsibly is essential for protecting our natural heritage. Tariffs contribute to environmental protection initiatives, such as pollution control and habitat restoration, ensuring our rivers and wetlands remain vibrant and healthy.

### 5. Supporting Economic Activities

Paying water tariffs is an investment in the sustainability of farmers, municipalities, and businesses' operations. Reliable access to clean water is essential for agricultural productivity, municipal services, and industrial processes. By supporting water management through tariffs, users help ensure the continued availability of this crucial resource.

## Demystifying Water Tariffs

There is a common misconception that water, being a natural resource, should be free. While water is part of the environment, the infrastructure and processes required to deliver it to users and manage its use are not. The costs associated with these activities must be covered, and water tariffs are a practical and fair way.

Additionally, the implementation of water tariffs is guided by principles of equity and affordability. Tariff structures are designed to ensure that all users contribute fairly based on their consumption and ability to pay, with provisions for assisting the financially disadvantaged.

## Our Commitment at IUCMA

At the Inkomati-Usuthu Catchment Management Agency, we are committed to transparency and accountability in managing water resources. Our goal is to provide high-quality water management services that support the needs of our communities while safeguarding our water resources for the future.

By paying water tariffs, you are playing a vital role in sustaining our water resources and ensuring we can continue providing clean, reliable water for all. Together, we can build a more sustainable and resilient future.

Therefore, the IUCMA requires the support of all water users in managing water resources for a sustainable future.



# An overview of the groundwater quantity status in the Inkomati-Usuthu Water Management Area (WMA)



By *Dr Teboho Shakhane from Resource  
Planning and Operations*

The IUCMA undertakes routine groundwater and surface water monitoring within the Inkomati-Usuthu WMA using a hydrometeorological monitoring network comprising fifty-seven (57) geo-sites (boreholes), 31 river flow, and 25 rainfall gauges. Groundwater monitoring is undertaken manually every month, whilst rainfall and stream flows are monitored using automated systems that telemetrically transmit data to custom relational databases housed at the IUCMA head office. The data collected is used to assess the groundwater quantity status. In 2022/2023, the IUCMA completed two groundwater studies, namely 1) The Catchment-Wide Groundwater Budget and 2).

The Ground Stress Index for the Water Management Area. These studies consistently established that the Sabie-Sand was characteristic of a heavily exploited catchment where unsustainable groundwater consumption was affecting groundwater availability and contribution to stream flow. The results indicated that the Crocodile catchment was predominantly characterised by stressed to critically stressed groundwater resource units. Consequently, this report aims to provide the monitoring information for these two catchments in the 2024/2025 hydrological year

## Corocdile

The comparison between the groundwater contribution to stream flow and groundwater levels for the current hydrological year and the preceding one is shown in Figure 1. The following notes were made against this dataset:

Groundwater resources were being constrained by rainfall other than groundwater abstraction, implying the sustainability of the resource, which is supported by the fact that groundwater levels have increased from the 2015/2016 drought to date (Figure 2 and Figure 3). However, the recovery rate is less than the decline observed during drought, perhaps due to added groundwater reliance as reflected by the fact that the Crocodile catchment is characterised by a higher groundwater footprint (an indicator of high groundwater consumption).

Because of the decreased groundwater recharge, from Q4 of the preceding hydrological year to Q4 of the current one, groundwater discharge to the stream correspondingly decreased by 2.37 m<sup>3</sup>/s.

Baseflow for Q4 was 7.55 m<sup>3</sup>/s, thereby meeting the set surface water international obligation flow (1.17 m<sup>3</sup>/s) and baseflow reserve (0.1 m<sup>3</sup>/s); consequently, groundwater played a key role in ensuring that international obligations were met and that rainfall (recharge) constrained the groundwater storage and discharge.

and November 2019 lead to a per cent increase from the objective values of about 67.6% (5m).

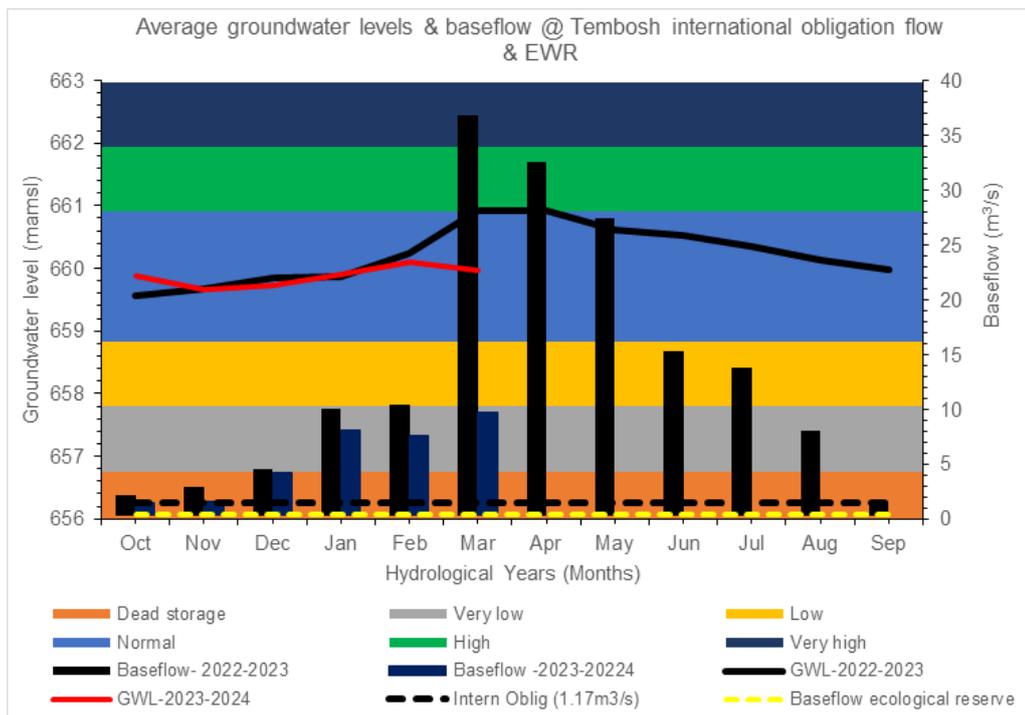


Figure 1: Averaged groundwater levels against the groundwater contribution to stream flow at the Tembosh International obligation and EWR site.

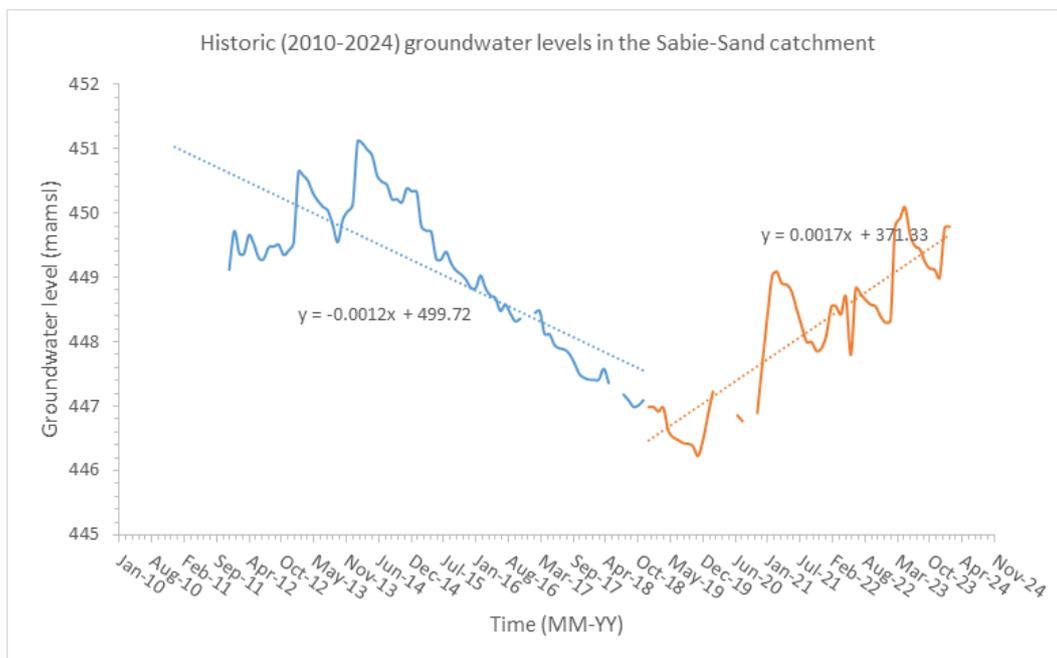


Figure 2: Historical rainfall against groundwater levels in the upper parts of the Crocodile catchment

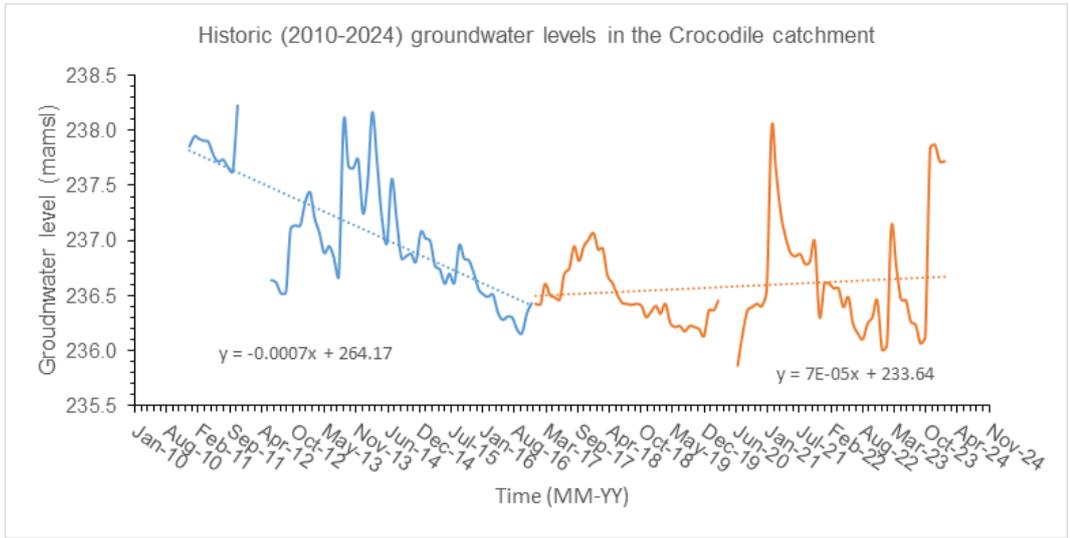


Figure 3: Historical rainfall against groundwater levels in the middle parts of the Crocodile catchment

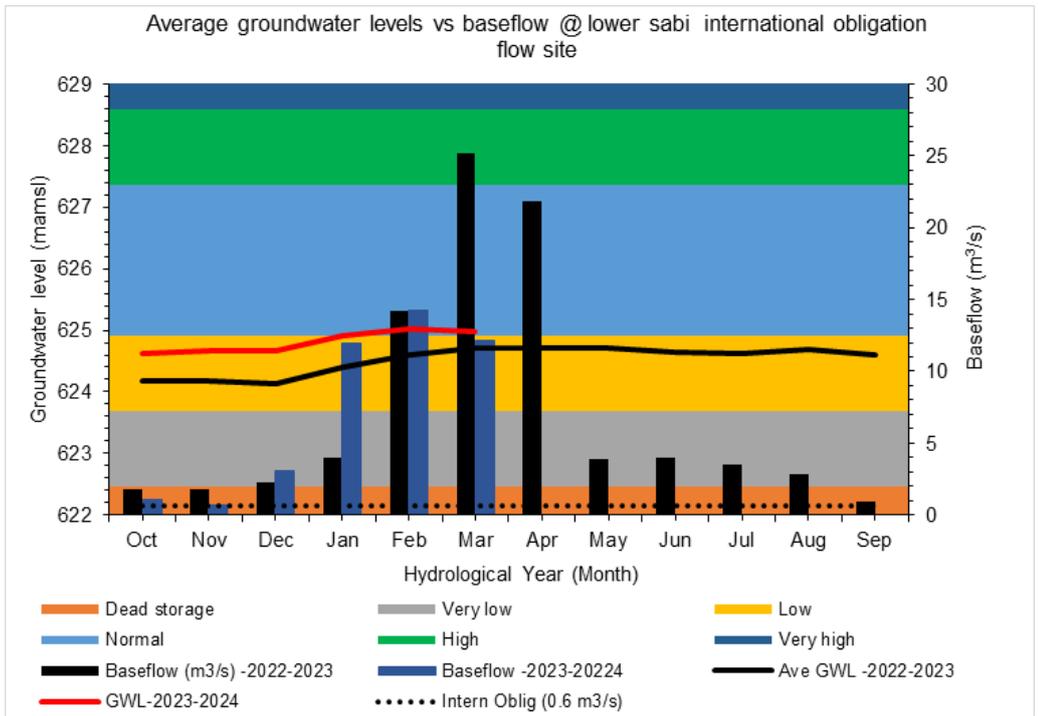


Figure 4: Average groundwater levels against the groundwater contribution to stream flow at the lower Sabie international obligation site.

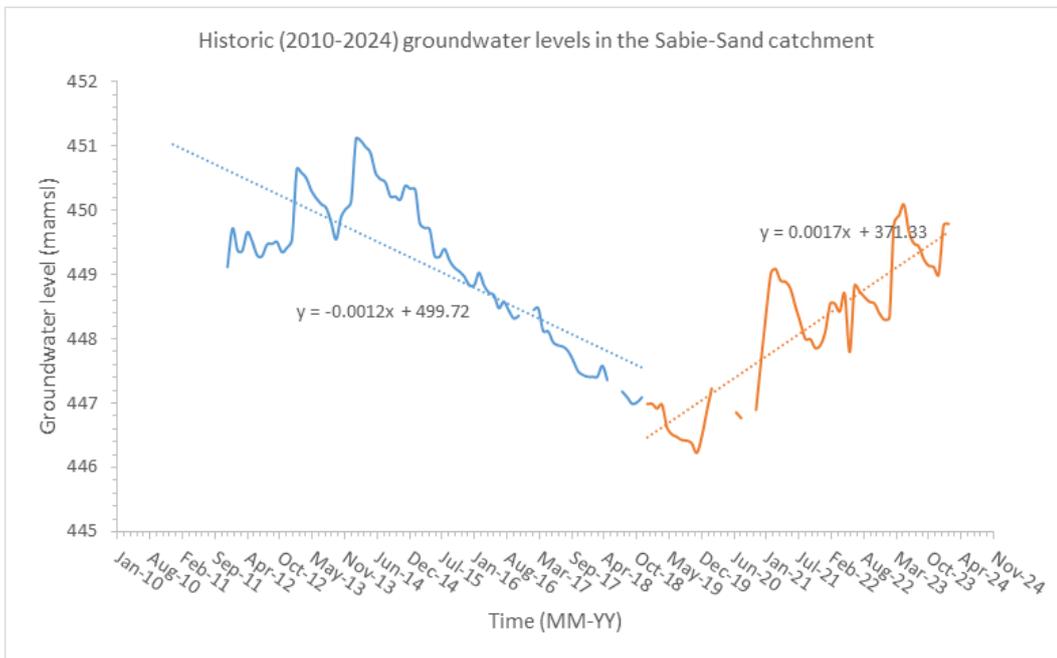


Figure 5: Historic groundwater levels in the Sabie-Sand

### Sabie-sand

The comparison between the groundwater contribution to stream flow and groundwater levels for the current hydrological year and the preceding one is shown in Figure 4.

Quarter to quarter, the average rainfall for the reporting quarter was about 29 mm less than that of the previous quarter (Q3), which implies that recharge for Q4 was potentially less than that of Q3. This indicates that rainfall (diffuse) recharge constrained groundwater storage dynamics.

Because of the decreased groundwater recharge from Q4 of the preceding hydrological year to Q4 of the current one, groundwater discharge to the stream correspondingly decreased by 1.31 m<sup>3</sup>/s. Nevertheless, groundwater contribution to stream flow met the baseflow set for a healthy ecological reserve.

In conclusion, of the four catchments in the Inkomati-Usuthu WMA, the Sabie-Sand and Crocodile were the most affected by the 2015/2016 drought, resulting in widespread stress conditions.

Monitoring evidence suggests that the groundwater resources are recovering from the observed stress. However, the groundwater levels reveal that the recovery rate is far less than the rate of decline, suggesting an increased groundwater use compared to pre-drought. Notwithstanding the observed recovery, the groundwater contribution to stream flow seems to be decreasing year-to-year.

This phenomenon might indicate unsustainable groundwater use that leads to a decrease in the groundwater flow into the streams, which might be detrimental to perennial stream flows, especially during low flows. This highlights the need for adaptive and integrated water management, whose effectiveness relies on predictive studies. Consequently, the IUCMA is undertaking a project to develop an integrated water resource model for the WMA to iteratively and timely capture the spatial and temporal dynamism of the natural groundwater budget due to the prevailing climate change, water demands, and population growth predictions.

# HYDROLOGICAL STATUS

## OF THE INKOMATI-USUTHU WATER MANAGEMENT AREA



By (from left to right ) *Dr Tendai Sawunyama and Mr Siphon Magagula from Resource Planning and Operations*

**An overview of the surface water resource status issued by the Inkomati-Usuthu Catchment Management Agency (IUCMA)**

The 2023-24 rainfall season has ended, and catchment water availability has decreased since March 2024. Over the last three months, the Inkomati Usuthu WMA water resource status has been classified as moderately high to high.

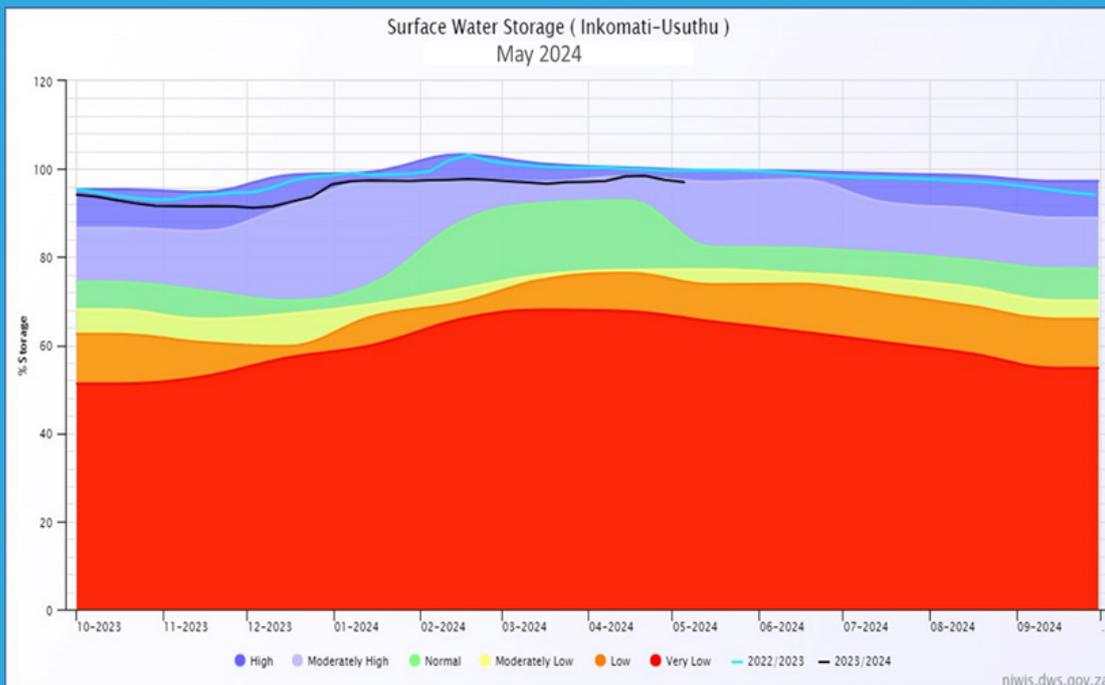


Figure 1: Inkomati-Usuthu WMA dams' storage level status

The river flow levels have been generally high in all the major rivers (Crocodile, Sabie, Komati, and Usuthu Rivers) in the WMA since the start of the 2023-24 hydrological year, and the significant increase was in December 2023. The Sabie and Crocodile systems have adequate water, and no releases from the Kwena dam and Inyaka dam have been required so far because there is enough water contribution coming in from the tributaries downstream of the dams.

As we enter the winter dry season of the hydrological year 2023-2024, all of the major dams in the Inkomati-Usuthu WMA are above 80.0%, except Westoe and Jericho Dam, which are at 70.0% and 67.0%, respectively.

The total storage level for all dams is 96.98%, which is lower than the previous year's storage level of 99.68% for the same period. The dam storage level in the Inkomati-Usuthu WMA has been dropping in recent months. Table 1 shows the current water storage levels at the key dams in the Inkomati-Usuthu WMA.



Figure 2: Kwena Dam spilling

Table 1: Dam levels' status within the Inkomati Usuthu WMA as of 15 May 2024.

Table 2: Dam levels status within the Inkomati Usuthu WMA as of 15 May 2024.

Dam Name	15 May 2024 - % FSC	Purpose/Towns
Da Gama Dam	100.2%	Irrigation
Inyaka Dam	100.1%	Irrigation, Domestic (Bushbuckridge)
Klipkopjes Dam	99.6%	Irrigation, domestic (White River)
Kwena Dam	82.0%	Irrigation, Domestic (Mbombela; Nkomazi)
Longmere Dam	97.4%	Irrigation, domestic (White River)
Nooitgedacht Dam	94.0%	ESKOM
Primkop Dam	100.8%	Irrigation, domestic (White River)
Heyshope Dam	101.1%	ESKOM
Jericho Dam	67.0%	ESKOM
Morgenstond Dam	88.0%	ESKOM
Westoe Dam	70.0%	ESKOM
Vygeboom Dam	101.0%	ESKOM
Witklip Dam	100.3%	Irrigation, domestic (White River)
Driekoppies Dam	99.0%	Irrigation, domestic (Nkomazi LM)

The heavy rainfall caused flash flooding in and across the WMA, and high river flow levels in all the major rivers.

The seasonal rainfall forecast indicates below-normal rainfall in the following months, that is, May to September (May-Jun-Jul (MJJ), Jun-Jul-Aug (JJA) and Jul-Aug-Sep (JAS)) in the Water Management Area. Based on the rainfall and river flow analysis, one can conclude that there was enough water in the river systems during the 2024 wet months from October 2023 to April 2024. Water users relying on runoff-river yield without dam storage still experienced abundant water without restrictions.

Most of the dams are on the High band for this time of the year, except for Jericho (Low) and Westoe (Normal) and because of constant Eskom abstractions and the operating rules to be maintained for these systems, the levels are not something to raise an alarm about. These dam levels indicate that we are going into the winter season with our dams in good condition, meaning that the probability that the dams in the WMA will fail to cater for the needs is low, with the correct implementation of operating rules.

Despite the current high water availability in all major river systems, the upcoming long, dry winter months should serve as a warning to all water users about catchment water availability for the next six months; as a result, the IUCMA encourages water users to continue using water sparingly and to implement their water conservation and demand management strategies. The IUCMA will continue to monitor usage, ensuring compliance and enforcement as needed.

<http://riverops.inkomaticma.co.za>

[www.dws.gov.za/hydrology](http://www.dws.gov.za/hydrology)

# Revised Water Pricing Strategy Unveiled by Mr Logan Majola (Department of Water and Sanitation): Insights and Implications for Water Management

*By the Editor*

During the Crocodile Stewardship Forum (formally known as the Catchment Management Forum), Mr Logan Majola from the Department of Water and Sanitation provided an insightful presentation on the revised water pricing strategy. The key focus was on the waste discharge charge system, its implementation, and its benefits to water users.

Mr Majola explained that his directorate is responsible for updating the water pricing strategy and recommending charges to the Minister for approval. He highlighted that the department has received numerous queries regarding the waste discharge charge system since introducing management charges on waste-related activities.

He elaborated on the legislative mandate informing the current strategy, emphasising sections 50 to 60 of the National Water Act. These sections empower the Minister to establish a pricing strategy for water use. Specific attention was given to sections 56 to 60, covering water resource management and waste discharge charges.

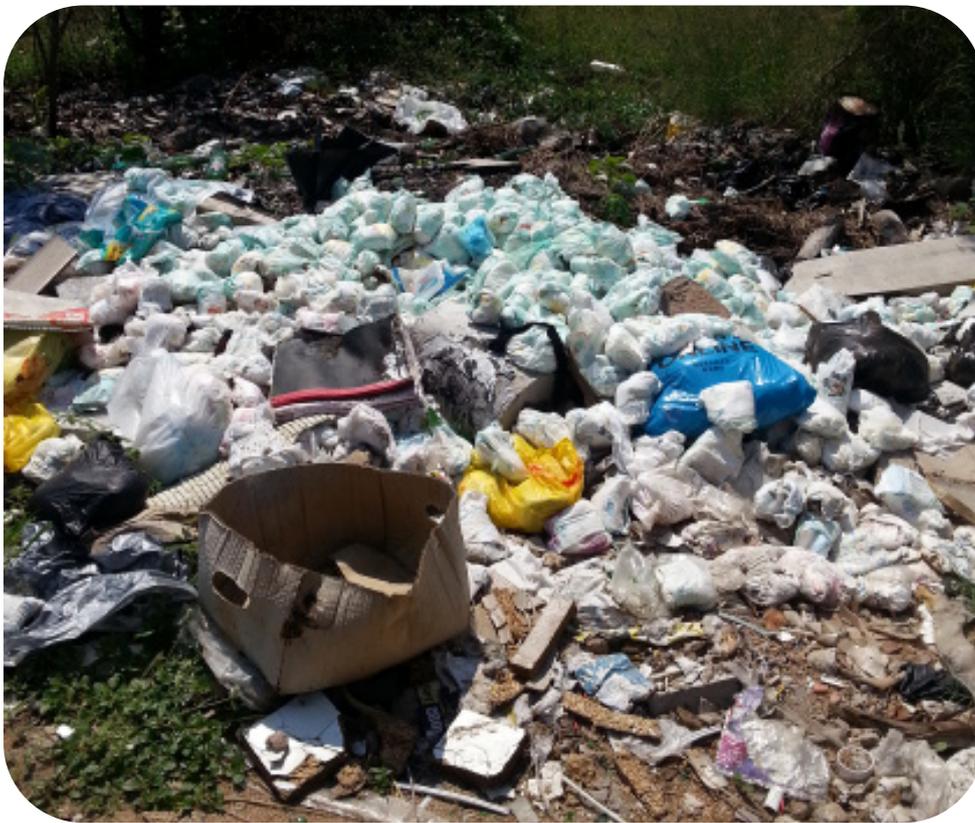
One of the significant updates in the revised strategy is separating domestic and industrial water users into distinct categories. This change aims to ensure that tariffs are appropriately targeted, preventing industries from unfairly benefiting from subsidies intended for domestic users. A new category for non-consumptive uses, such as hydropower generation, solar energy, and recreational activities, has been introduced.

The revised strategy also introduces two new charges: the economic regulator charge and the waste mitigation charge. The economic regulator charge aims to support the pricing strategy's implementation and maintenance, while the waste mitigation charge focuses on managing and mitigating waste discharges within specific catchments.

Mr Majola explained that the waste discharge charge system ensures that only users contributing to specific waste variables within a catchment are liable for the charges. This targeted approach places the financial burden on those responsible for the waste, promoting accountability and effective resource management.

In summary, the revised pricing strategy and the waste discharge charge system represent a significant step forward in managing South Africa's water resources. By aligning tariffs with specific user categories and introducing targeted charges, the strategy aims to promote sustainable water use and ensure the equitable distribution of costs.

Mr Majola concluded his presentation by emphasising the importance of successful ongoing communication and collaboration in implementing the new strategy.



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# Matome Mahasha on Revitalising Catchment Management Stewardship

*By the Editor*

In a recent presentation, Mr. Matome Mahasha from the Department of Water and Sanitation passionately underscored the importance of collaborative efforts in managing South Africa's water resources. At the Crocodile Stewardship Catchment Stewardship Forum, Mr Matome highlighted the department's ongoing initiatives to establish nine catchment management agencies across South Africa.

## Collaborative Stewardship and National Water Strategy

Mahasha emphasised the significance of the newly gazetted National Water Resource Strategy (NWRS 3), which aims to revitalise existing catchment forums. This strategy encourages stakeholders from

various sectors to support the transformation of these forums into Catchment Stewardship Forums. This transition is designed to enhance collaboration and ensure sustainable management of water resources.

## Addressing Environmental Challenges

The Department of Water and Sanitation recognises the severe challenges water resources face. Mr Matome called upon all stakeholders to join these stewardship forums, focusing on the entire water value chain. This includes addressing environmental issues impacting water source management and protecting aquatic and non-aquatic species.

## Coordinated Efforts for Sustainable Management

A crucial aspect of this initiative is the coordination of efforts to safeguard water, land, and other resources. Mahasha commended the Inkomati-Usuthu Catchment Management Agency (IUCMA) for its proactive approach in transitioning Crocodile Management Forums into Catchment Stewardship Forums. He urged stakeholders to review guidelines and constitutions to align with the new stewardship model.

## Engagement and Activities on the Ground

Mahasha highlighted various conservation activities already undertaken by existing catchment

## Broadening Stakeholder Involvement

One key objective is to involve a broad spectrum of stakeholders, including government sectors, small-scale farmers, and vendors, in sustainable agricultural practices. These practices aim to minimise water pollution and enhance climate resilience. Mahasha also stressed the importance of incorporating monitoring and research into forum activities, with universities playing an instrumental role.

## Reflecting and Learning from Successes

Reflecting on past successes, such as the Indaba held on March 20, 2023, Mahasha highlighted the importance of regular reflection and learning. He

urged forums to engage actively with local authorities during Integrated Development Plan (IDP) updates to ensure alignment with catchment management goals.

#### Governance and Conflict Management

Clear and robust governance is essential for the success of these forums. Mahasha emphasised the need for rules and conflict management strategies to ensure effective collaboration. He commended the Inkomati-Usuthu CMA for its efforts in revitalising the Crocodile Catchment Forums and encouraged continued partnership and innovation.

#### Success Stories and Future Prospects

The Moreleta Spruit Catchment Forum and the Zumba Catchment Partnership serve as exemplary models of successful stewardship. These initiatives have led to environmental restoration, community empowerment, and economic benefits through activities such as ecotourism and sustainable agriculture.

In concluding his presentation, he highlighted the need for integrating social and cultural values into stewardship efforts. He called for the inclusion of all stakeholders, ensuring that no community is left behind. The holistic approach to catchment management aims to achieve a cleaner environment and a sustainable hydrological cycle.

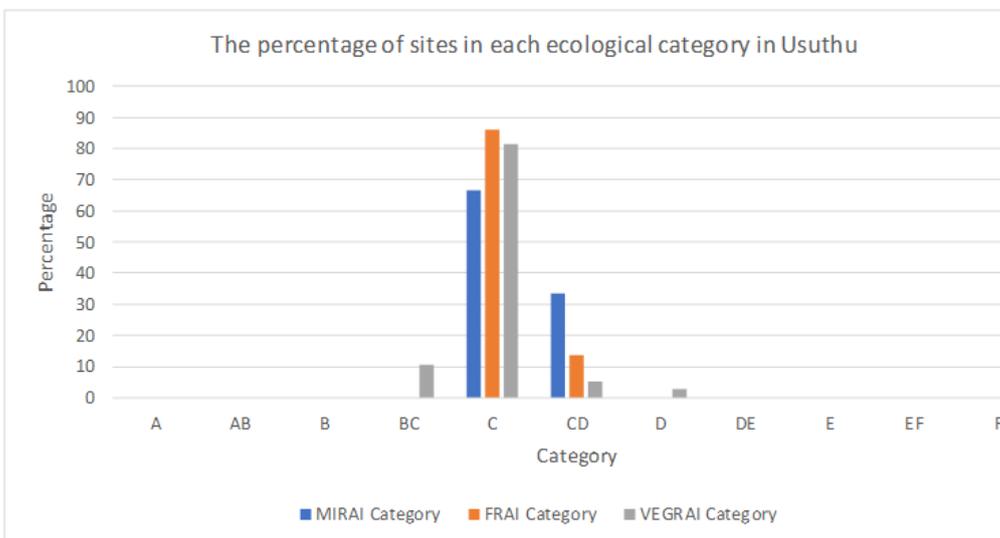
Mahasha's call to action is clear: the success of catchment stewardship relies on collective effort, patience, and perseverance. By working together, South Africa can ensure the sustainable management of its precious water resources for future generations.

# Ecological Status of the Usuthu Catchment



By Marcus Selepe from Resource Quality Monitoring

The Resource Quality Monitoring division is responsible for water quality monitoring, which incorporates the health of the aquatic ecosystem. The health of the aquatic ecosystem is monitored in a programme called the River Ecosystem Monitoring Programme (REMP). The REMP complements the surface water chemical and bacteriological monitoring programme and contributes to the IUCMA strategic outcome of protected water resources. It enables the monitoring of the ecological condition of river ecosystems in South Africa and provides information to support the management of rivers. It also helps in the early detection of problems, allowing preventative measures to be implemented on time.



Based on the macroinvertebrates, fish and riparian vegetation results (September 2023 survey), the ecological condition in the catchment ranged from close to largely natural (BC) to a primarily modified (D) condition (Figure 1). About 67% of the sites were in a moderately modified (C) condition and 33% in a close to moderately modified (CD) condition for macroinvertebrates (Figure 3). For fish, 86% of the sites were in a moderately modified (C) condition, and 14% were in a close to moderately modified (CD) condition.

Figure 1: The percentage of sites in each ecological category in the Usuthu catchment for macroinvertebrates (MIRAI), fish (FRAI) and riparian vegetation (VEGRAI) at all sites monitored during the September 2023 survey.



Most sites (82%) were in a moderately modified (C) condition for riparian vegetation, with 11% in a close to largely natural (BC) condition. Only 5% and 3% of the sites were in a close to moderately modified (CD) condition and a primarily modified condition (D) for riparian vegetation, respectively (Figure 1).

#### Aquatic Macroinvertebrate

The September 2023 survey shows that the Usuthu Catchment was generally in an ecological category C, showing that the catchment is in a moderately modified ecological condition in response to anthropogenic activities (Figure 2). These activities indirectly introduce pollutants into the river through diffuse pollution (i.e., agriculture through run-off) or directly through wastewater treatment works that discharge insufficiently treated effluent into rivers.

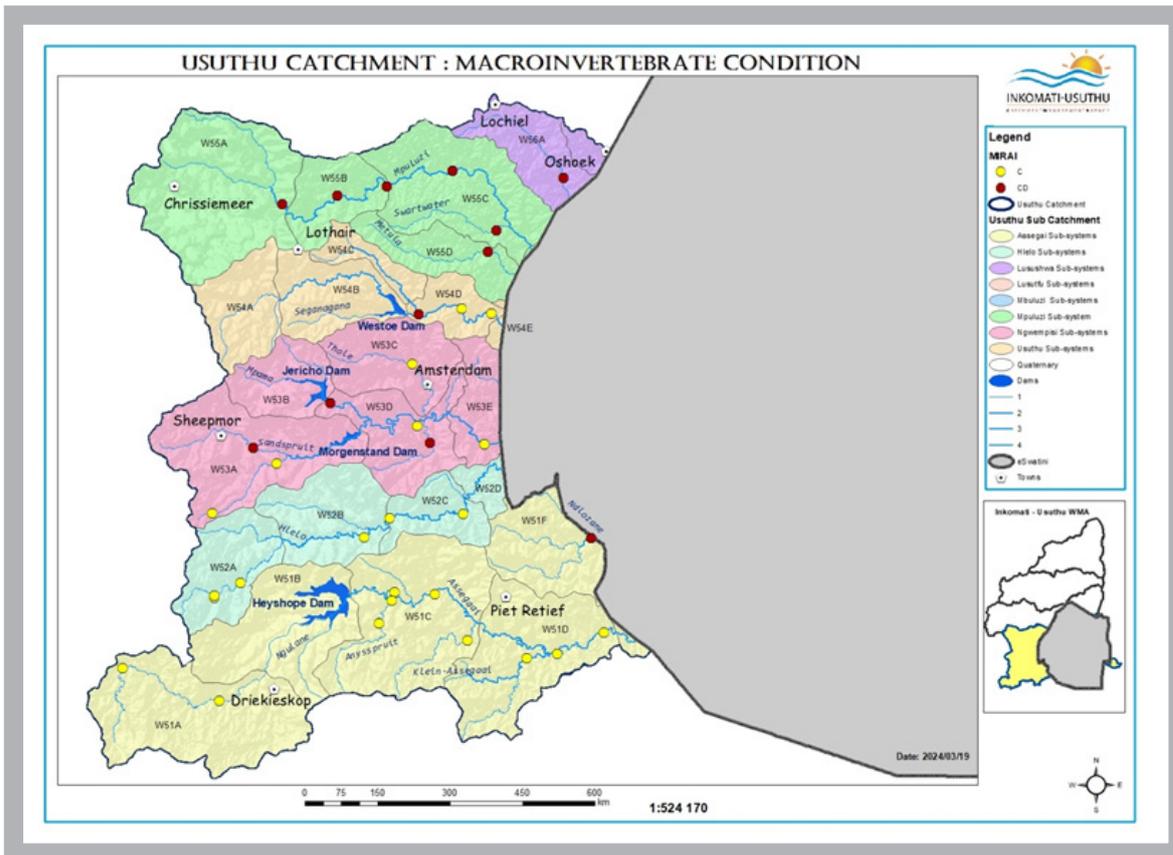


Figure 2: Ecological categories in the Usuthu catchment reflect the condition of macroinvertebrates for sites monitored in the September 2023 survey.





# Celebrating a Decade of Excellence: Local Learners Shine at 10th Annual Science Competition



By Ms Charmaine Zulu from  
Communications and Intergovernmental  
Relations



In a vibrant display of young talent, thirty learners from six different schools gathered at the Lowveld National Botanical Garden last Friday for the 10th annual Science School Competition. Held annually during National Water Week, the event highlights the critical importance of water conservation and innovative solutions to global climate challenges.

National Water Week serves as a prelude to World Water Day on March 22, a global event established by UN Water to highlight the vital role of water in sustainable development. This year, the spotlight was on groundwater, a crucial yet often overlooked resource, emphasising its significance in environmental planning and policy.

The competition, organised by the Inkomati-Usuthu Catchment Management Agency (IUCMA) and its

mother department, Water and Sanitation, in collaboration with various sector stakeholders, is part of a broader intergovernmental initiative to engage educational institutions in water conservation efforts.

The event was generously sponsored by the Department of Water and Sanitation (DWS) with trophies for both regional and final competitions, 90 school bags, 90 scientific calculators, 90 tablets, transport to the final competition and mainly supported by Umsimbithi Mining company with 15 laptops for the final competition.

Other stakeholders such as Komati Basin Water Authority (KOBWA) supported the competition by donating R 27500 in cash vouchers, Metal Manganese Company sponsored the students with 15 laptop bags, Silulumanzi with bottled water, T-shirts for the LOC team and String bags and SANB sponsored the competition by allowing the competition to be hosted at the Lowveld Botanical Garden.



From left : IUCMA's Acting CEO Adv M.B Shanagu & DWS Provincial Head Mrs D Sifunda

The event was graced by esteemed guests and speakers from multiple water resource sectors such as the Acting Chief Executive Officer Adv. MB Shabangu from the IUCMA, IUCMA Board Chairperson Ms. Linda Carol Zulu, the Chief Executive Officer for KOBWA Mr. TM Shongwe, DWS Provincial Head Ms. Dudu Sifunda, Ms. Gertrude Dlamini from Silulumanzi, Mr. P. Mokoena from the Department of Education and the Honourable MMC for Technical Services Mr. BD Mkhathswa.

"This school competition is not just an academic exercise; it's a critical platform for innovation where these young minds develop practical solutions to water issues," emphasised Zulu, chairperson of the IUCMA board. Your support and interest in this event are crucial in fostering such innovation.

Chief Executive Officer for KOBWA Mr. TM Shongwe added with great excitement that they are impressed with how the competition has been growing throughout the years, "A decade later and the students within the catchment areas have proven that there is space for them in our water sectors. Looking at the impressive work and models they have created, I am certain that next year will be even bigger and better and the Water Basin Authority will be there to support this great initiative."



Second Position: Learners from Zenzele Secondary School receiving their prizes during the 2024 Annual Competition.

With their innovative solutions and dedication, Ndlela Secondary emerged as the champions of this rigorous competition, followed closely by Zenzele Secondary and Takheni Secondary in second and third places, respectively. These students, challenged to devise solutions aligned with this year's theme, "Water for Peace," demonstrated how water management plays a pivotal role in fostering peace and cooperation.

The participating schools included Ndlela Secondary, Mmabatho Mokoena Secondary, Mahashe Secondary, Takheni Secondary, Zenzele Secondary, and Sitinfile Secondary. The competition tested their scientific understanding and ability to innovate under pressure, addressing real-world problems with feasible solutions.

"The ideas presented today could very well be part of our future water conservation strategies," Zulu added, highlighting the potential impact of these young scientists on future policy and environmental strategies. Their creativity and dedication give us hope for a more sustainable future.

The event concluded with an award ceremony, where students received recognition for their hard work and creativity. This competition is a testament to the ongoing commitment of local schools, governmental agencies, and the community to foster an environment where education meets real-world environmental challenges, nurturing the next generation of scientists and environmentalists.



First Position: Learners from Ndlela Secondary School receive their prizes during the 2024 Science Schools Competition



Interview: IUCMA'S Board Chairperson Ms. Linda Zulu shares insights during a media interview about the 10th Annual Science Schools Competition.



Programme Director of the day: Mr. Makhubele from IUCMA.



Third Position: Learners from Takheni Secondary School receive their prizes during the 2024 Annual Science Schools Competition.



From left : KOBWA's CEO Mr. T Shongwe & Ms. G Dlamini from Silulumanzi.



IUCMA's Acting Executive Executive Corporate Servi Ms. Sylvia Machimana giving a vote a thanks.



Present: Learners from Takheni Secondary School present their model during the 2024 National Water week Final Science Schools Competition.



Response: Learners Lugebhuta High School actively respond to questions during the Regional Science Schools Competition for Lower Komati Sub-catchment.



Model Display :Learners from Sitintile Secondary School display their model during the 2024 Regional Science School Competition.



Celebration : Learners from Acorns Oaks Comprehensive celebrate second prize during the Regional Science Schools Competition for Sand Sub-catchment.



Excitement : Ndlela Secondary School celebrates first prize during Regional Science Schools Competition for Usuthu South Sub-catchment.



Expression :Learners from Memezile High School excitedly express their gratitude to IUCMA for exposing them to the the water sector during the Regional Science Schools Competition for Sabie Sub-catchment.



Excitement : Learners from Shinyukane Secondary School excitedly present their model during the Lower Komati Sub-catchment.



Demonstration : Learners demonstrate Kurhula High School how their model functions during the Regional Science Schools Competition for Sand Sub-catchment.



Display : Learners from Serisha High School display their model during Regional Science Schools Competition for Sand Sub-catchment.



Interaction : Learners from Mahushe Agricultural High school actively interact with adjudicators during the Regional Science Schools Competition for Lower Komati Sub-catchment.



Celebration : Learners from Highveld High School celebrate third prize during Regional Science Schools Competition for Upper Komati & Usuthu North Sub-catchments.



Presentation : Learners from Khaliphani Secondary School presents their model during Regional Science Schools Competition for Crocodile Sub-catchment.

# Department of Employment and Labour's Employment and Jobs Fair



**Mr Siboniso Mahlalela from  
Communications and Intergovernmental  
Relations**

The Inkomati-Usuthu Catchment Management Agency (IUCMA) and other stakeholders in the public sector join forces with the Department of Employment and Labour for a transformative jobs fair session.

Inkomati-Usuthu CMA joins forces with the Department of Employment and Labour with over 50 institutions from the public sector to engage with unemployed youth from Mpumalanga at Thulamahashe stadium, outside Mbombela. The event served as a platform for unemployed youth to explore career opportunities that exist across institutions that were present and getting to learn about the IUCMA.

The Department of Employment and Labour coordinated a platform where unemployed youth can access information on job opportunities that are available for them in both the public and private sectors. The department plays a significant role in reducing unemployment, poverty and inequality through a set of policies and programmes developed in consultation with social partners, which are aimed at improved economic efficiency and productivity, employment creation, sound labour relations, eliminating inequality and discrimination in the workplace and alleviating poverty in employment.

The purpose of the event was to empower the unemployed youth with knowledge on how to succeed and provide a platform for them to network with businesses, individuals and organisations which attended. Notable, the IUCMA played a pivotal role, with Ms. Ntokozo Shongwe and Ms. Nomsa Maider leading informative sessions on the various career pathways and encouraged graduates to participate in opportunities that are to give them exposure to the work environment in the IUCMA.

The event was graced by the Minister of Employment and Labour, Hon. Thulas Nxesi and Deputy Minister,

Ms. Boitumelo Moloi. Amongst other attendees was the Amashanangana Chief, Hosi Abednigo Nxumalo and the Bushbuckridge Executive Mayor Councillor Sylvia Nxumalo who both gave messages of support to the great initiative brought to the public by the department. The Nxumalo duo pleaded with the Minister to establish satellite office for the Bushbuckridge community, they also requested that people from their community should be prioritised for employment in the satellite office.

In his speech, Minister Nxesi told the community that documentation for the establishment of a labor center to provide Departmental services at a close range was nearing completion. The Minister also recommended job seekers to use the Jobs Fair to begin their entry or re-entry into the labor market "in this limited job landscape."

He further reminded a wide range of the young jobseekers who attended the event that there is "no job that is a dirty job" as well as that "there is no job that is too poorly - that is how we start out to gain experience and work our way up from the bottom". Nxesi said that applying for an entry-level job may result in the discovery of new abilities and capabilities.

The IUCMA prays and wishes well for jobseekers in this devastating era of high statistics of unemployment.

***Continues on the next page.***



Keynote address: Minister Thulas Nxesi addressing jobseekers on how to apply for government job opportunities through the department's portal.



Interaction: Deputy Minister, Ms. Boitumelo Moloi interacts with jobseeker through a question and answer session.



Message of support: Amashanangana Chief, Hosi Abed-nigo Nxumalo welcomes the departments's initiative.



Plea: Bushbuckridge Executive Mayor Councillor Sylvia Nxumalo pleads with the Minister to establish satellite office for the Bushbuckridge community.



Exhibition: IUCMA's Ms. Ntokozo Shongwe from Institutions and Participation exhibits core-careers within the IUCMA.



Concentration : Attendees concentrate as they grasp information from various presenters during the Jobs Fair.

# Charting a Sustainable Future: INCO-MAPUTO GEF 8 Project Nears Approval



**Mr. Buyani Fakudze From INMACOM**

The Incomati and Maputo Watercourse Commission (INMACOM) has reached an exciting stage in its GEF 8 funding proposal. The final validation workshop for the project proposal was held on 18 February 2024 in Mbombela, South Africa. The project aims to strengthen the integrated transboundary management of water resources across the three member states of the Incomati and Maputo basins. The workshop was attended by UNDP Eswatini Deputy Resident Representative Nessie Golakai-Gould, INMACOM Commissioner Gedion Siziba, and INMACOM Interim Executive Secretary Edward Mswane, among others.

## **Expected Outcomes**

Some of the anticipated outcomes from the project include:

Building a scientific understanding of the system from source to sea: Promoting holistic planning based on the impacts of land-based activities on the ecosystem.

Demonstrating approaches to address environmental problems: Focusing on the two transboundary river basins and the Lubombo Transboundary Frontier Conservation Area (TFCA).

Enhancing water, food, energy, and environmental security (WEF Nexus gains).

## **Project Impact**

The project is expected to impact:

Sustainable transboundary partnerships and cooperation.

Water for livelihood and sustainable socio-economic

development: Ensuring a balance between resource demands and the protection of freshwater and related marine ecosystems.

Building confidence among stakeholders: Gaining their support for sustainable development.

Contribution to Sustainable Development Goals (SDGs): Specifically, SDGs 1, 2, 6, 7, 8, 13, and 15, and enhanced water security in freshwater and associated marine ecosystems.

If the GEF board approves the project document, the project will commence in January 2025. The total project budget is estimated at \$7 million, with \$2 million allocated to pilot projects in communities most affected by the issues highlighted in the project document.

## **Selected Pilot Projects**

While developing the project document, ensuring the project benefits communities on the ground was crucial. The following pilot projects were selected from the three member states:

### **ESWATINI**

**Mkhondvo—Ngwavuma Water Augmentation Project (Mpakeni Dam Zoning Plan):** This project aims to improve livelihoods and environmental conservation through a sustainable land use plan for the Mpakeni Dam, preventing unplanned development and protecting conservation efforts.



INMACOM delegates meet with water users in the Lower Komati Sub-Catchment.

**Lomati FARMWISE Smart Agriculture Project:** This pilot demonstration project in the Lomati River Basin aims to improve water use efficiency, enhance food security, and maintain ecological diversity.

## MOZAMBIQUE

**Matutuine-Manhangane, Catembe N'sime:** Located at the Maputo River estuary, this project focuses on mangrove rehabilitation and mariculture of mussels, oysters, and seaweed. The area is a critical habitat for the endangered Dugong species.

**Magude:** This project supports subsistence agriculture, livestock farming, and conservation efforts. It also aims to boost local employment and ecological preservation in Magude, home to the Karingani Game Reserve.

## SOUTH AFRICA

**Donkerhoek Stewardship Project:** This project involves the Donkerhoek farming community, which has entered into a conservation stewardship agreement supported by WWF to manage invasive species. Potential co-funding may come from the nearby Kangra Mine.

**Dingleydale Irrigation Scheme:** In Bushbuckridge Local Municipality, this project involves approximately 1,700 hectares of land subdivided into regions with balancing dams to support around 60 farmers each. Major crops include green mealies, tomatoes, cabbages, spinach, and chilli.

The INCO-MAPUTO GEF 8 pilot projects aim to address the pressing issues identified in the project document, ensuring the benefits reach the communities most in need. They represent a significant step forward in transboundary water management and sustainable development for the Incomati and Maputo basins. By focusing on scientific understanding, innovative approaches, and community-oriented pilot projects, INMACOM is poised to impact the region's environmental conservation, water security, and socio-economic growth.

As we move towards the potential launch in January 2025, the commitment and collaboration of all stakeholders will be crucial in turning these ambitious plans into reality, ensuring a resilient and prosperous future for the communities and ecosystems that depend on these vital water resources.

*Continues on the next page.*



INMACOM delegate visits a farm in the Crocodile sub-Catchment.



INMACOM delegates meet with farmers in the Sand Sub-catchment.

# Blue Deal Crocodile River Partnership continues to make strides towards quality water in the Crocodile



## River



The Blue Deal Crocodile River Partnership continues its collaborative efforts to enhance the quality of water and sustainability in the Crocodile River in the Mpumalanga Province. Comprising a diverse coalition of partners, including Dutch Water Authorities (DWA), Department of Water and Sanitation (DWS), Inkomati-Usuthu Catchment Management Agency (IUCMA), Department of Cooperative Governance and Traditional Affairs (COGTA), Municipal Infrastructure Support Agent (MISA) and the three participating local municipalities of City of Mbombela, Emakhazeni and Nkomazi - their mission focuses on optimising six wastewater treatment facilities along the Crocodile River. The six wastewater treatment facilities are made up of two plants per participating municipality.

The main aim of the Blue Deal Crocodile River Partnership is to achieve Green Drop certification for all participating plants by 2030, ensuring excellent performance in wastewater treatment and better water quality for the Crocodile River system.

The recent work visit made significant progress with the completion of three Shit Flow Diagrams (SFD) covering one plant per participating municipality to aid urban sanitation programming. The visit also resulted in the on-site training of process controllers through the Buddy Twinning Program, which facilitates knowledge exchange and optimises treatment processes. Additionally, recent advancements in sludge classification at the White River WWTW enable its use in agriculture, promoting sustainability. Moreover, efforts were made to increase community awareness about wastewater treatment and how their actions can influence the process.

Overall, the partnership has once again made significant strides towards achieving its goals. Whether these strides have been in the right direction will be clear after the next Green Drop audit in the third quarter of this year.

**Issued by the Blue Deal Crocodile River Partnership Communication Task Team:**

Themba Khoza (KhozaB@dws.gov.za), Sylvia Machimana (sylviam@iucma.co.za) or Guido van de Ven (guido.bluedeal@gmail.com)



Ms. Thabisa Manxodidi presenting the Shift Flow Diagram.



Blue Deal Team meets with the Nkomazi Local Municipality mayor, Cllr Xolani Mabila.

## Meet the Technical Task Team



## Blue Deal Crocodile River Partnership

<p><b>DUTCH WATER AUTHORITIES</b></p>	<p><b>INKOMATI-USUTHU</b> CATCHMENT MANAGEMENT AGENCY</p>	<p><b>water &amp; sanitation</b> Department: Water and Sanitation REPUBLIC OF SOUTH AFRICA</p>
<p>cooperative governance &amp; traditional affairs Department: Cooperative Governance and Traditional Affairs REPUBLIC OF SOUTH AFRICA</p>	<p><b>CITY OF MBOMBELA</b> THE ULTIMATE DESTINATION</p>	<p><b>MISA</b> MUNICIPAL INFRASTRUCTURE SUPPORT AGENT</p>
<p><b>Nkomazi Municipality</b></p>	<p><b>Emakhazeni</b> Local Municipality</p>	

# CAREER GUIDANCE

## FOR LEARNERS IN WATER RESOURCE MANAGEMENT



**Mr Sizile Mnisi**  
*From Executive Water Resource Management*



The Inkomati-Usuthu Catchment Management Agency (IUCMA) is an agency that has been established in terms of the relevant section of the National Water Act, Act 36 of 1998. The IUCMA has been established by the National Department of Water Affairs (DWA) in terms of the Act, to specifically implement certain sections of the Act. The mentioned sections of the Act address the management, protection, development and prevention of pollution of the national water resources.

The IUCMA is the first agency to be established by the DWA in the Mpumalanga area. The IUCMA has the responsibility to protect and manage the Crocodile River, Sabie, Inkomati Rivers and their tributaries within the Inkomati Water Management Area.

Career options and study opportunities in the form of financial assistance are offered by IUCMA. Since the IUCMA is a science focused institution, subject choices during high school should include science, geographical sciences, biological sciences and mathematics.

The breakdown of career choices offered by the IUCMA is indicated below:

### 1. Water Resource Specialist/Manager

Academic qualifications:

- 1.1. Bachelor of Science degree in (Aquaculture; Biology; Chemistry; Chemical Engineering; Biochemistry; Microbiology, Limnology; Zoology; Botany; Civil Engineering)
- 1.2. Bachelor of Science in Environmental Sciences (Geography; Geographical Information System; Geology)
- 1.3. Bachelor of Technology Water Care
- 1.4. Bachelor of Technology Analytical Chemistry

### 2. Hydrologist

Academic qualification:

- 2.1. Bachelor of Science (Hydrology; Hydrological Modelling; Water Quality Modelling)

### 3. Aquatic scientist

Academic qualification:

- 3.1. Bachelor of Science (River Health; Aquaculture; Bio-monitoring; Water and Waste Water; Water Quality Management; Zoology; botany; Limnology)



#### 4. Water Resources Planners

Academic qualification:

4.1. Bachelor of Science/Engineering (Water Engineering; Chemical; Waste Water Treatment; Water Resources Modelling)

#### 5. Water Resources Compliance Monitoring and Enforcement

Academic qualifications:

5.1. Bachelor of Science degree in (Biology; Chemistry; Chemical Engineering; Biochemistry; Microbiology, Environmental Law; Hydrology; Geohydrology; Civil Engineering)

5.2. Bachelor of Science in Environmental Sciences in (Geography; Environmental Law, Geographical Information System)

5.3. Law degree (Environmental Law)

#### 6. Geohydrologist

Academic qualifications:

6.1. Bachelor of Science (Hydro-geology; Hydrology)

6.2. Bachelor of Technology (Geo-hydrology; Hydrology; Water Resources Modelling; Water Quality Management)

#### 7. Stakeholder Management

Academic Qualifications:

7.1. Bachelor of Arts (Developmental Studies; Public Administration; Public Management; Social Studies)

7.2. Bachelor of Technology (Developmental Studies; Public Administration; Public Management)

## LIST OF SOUTH AFRICAN UNIVERSITIES

### EASTERN CAPE

**NELSON MANDELA**  
UNIVERSITY

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Email: [info@mandela.ac.za](mailto:info@mandela.ac.za)



Tel: 047 502 2200

Website: [www.wsu.ac.za](http://www.wsu.ac.za)

Email: [postmaster@wsu.ac.za](mailto:postmaster@wsu.ac.za)



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### NORTHERN CAPE



**SOL PLAATJE**  
UNIVERSITY

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Email: [enrolment@ul.ac.za](mailto:enrolment@ul.ac.za)

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**Central University of  
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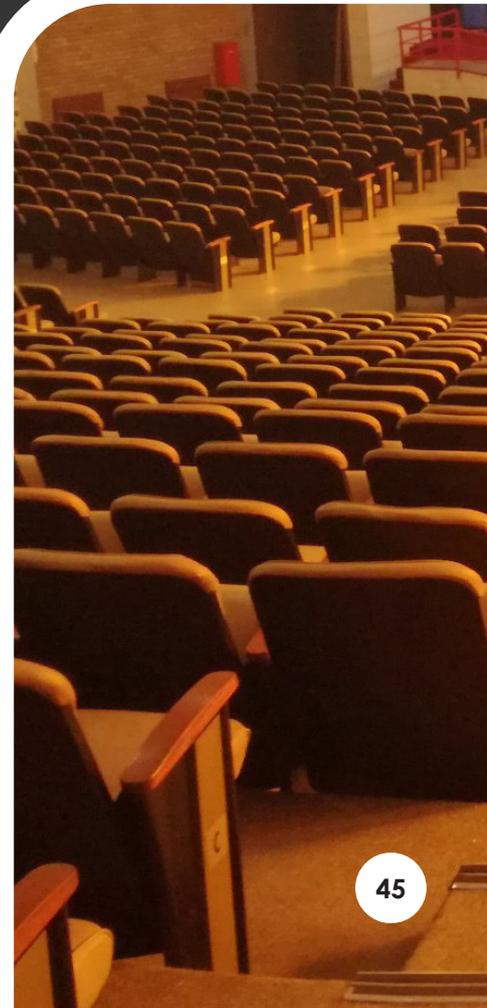
**UNIVERSITY of Cape Town**  
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Email: [admissions@uct.ac.za](mailto:admissions@uct.ac.za)



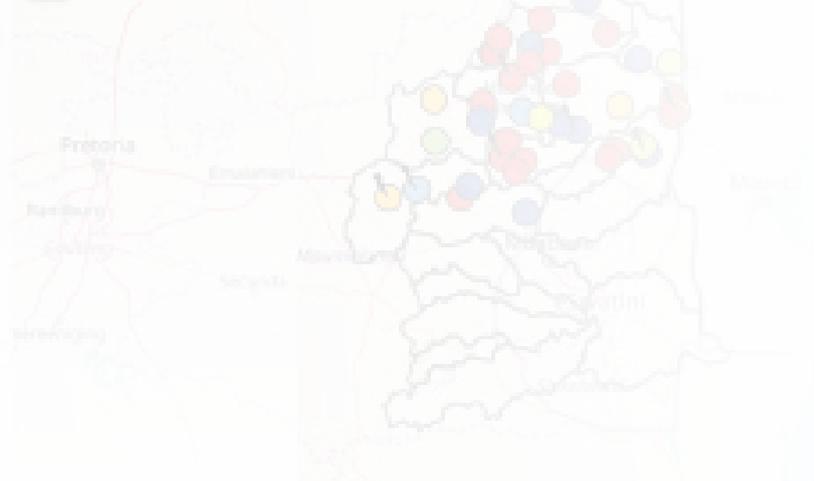
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Email: [info@sun.ac.za](mailto:info@sun.ac.za)



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Email: [info@cput.ac.za](mailto:info@cput.ac.za)



(A1H016) Bulifelspruit 2:00:00	3.27	m³/s
(A1H017) Komati Rivr 8:00:00	3.06	m³/s
(A1H023) Komati Rivr 11:00:00	2.75	m³/s
(A1H033) Komati Rivr 04:00:00	2.56	m³/s
(A1H036) Komati Rivr 14:00:00	2.61	m³/s
(A1H040) Komati Rivr 2:00:00	1.79	m³/s
(A1H050) Komati Rivr 08:00:00	1.66	m³/s
(A1H053) Komati Rivr 00:00:00	1.66	m³/s
(A1H058) Komati Rivr 06:00:00	1.66	m³/s
(A1H060) Gersera Riv 2:00:00	0.43	m³/s
(A1H010) Noordkop 8:00:00	1.03	m³/s



# RIVER OPERATIONS WEB PORTAL

The Inkomati-Usuthu Catchment Management Agency is committed to bring you all the information you need to enable you to use water wisely and considerably. The IUCMA has established a web portal for River Operations that brings you the daily flows of the water in the Catchment. To gain access to this information, please log on to

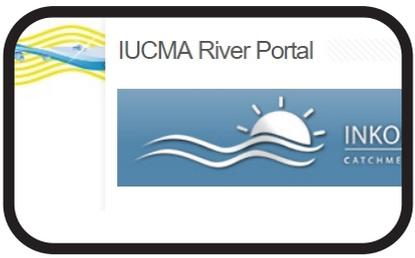
**<http://riverops.inkomaticma.co.za/>**

The link to the River Operations portal is also available on the website at [www.iucma.co.za](http://www.iucma.co.za) to access it go to the **home page of the IUCMA website. click Hydrology water quality status then click the river operations web portal link**

### STEP 1



### STEP 2



## References

United Nations. (2024). Water For Peace[photograph]. <https://www.unwater.org/news/%E2%80%98water-peace%E2%80%99-world-water-day-2024-campaign-launches>



**Illegal Dumping  
in a watercourse is an  
offense and is prohibited**



**Illegal Damming  
in a watercourse is an  
offense and is prohibited**

***Report any water-related  
illegal activities to the***

***Inkomati-Usuthu Catchment Management Agency***

**083 654 0291**





**Private bag X11214,  
Mbombela, 1200**

**2nd Floor, ABSA Square Building,  
20 Paul Kruger Street, Mbombela, 1200**

 **083 654 0291**



**[www.iucma.co.za](http://www.iucma.co.za)**



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