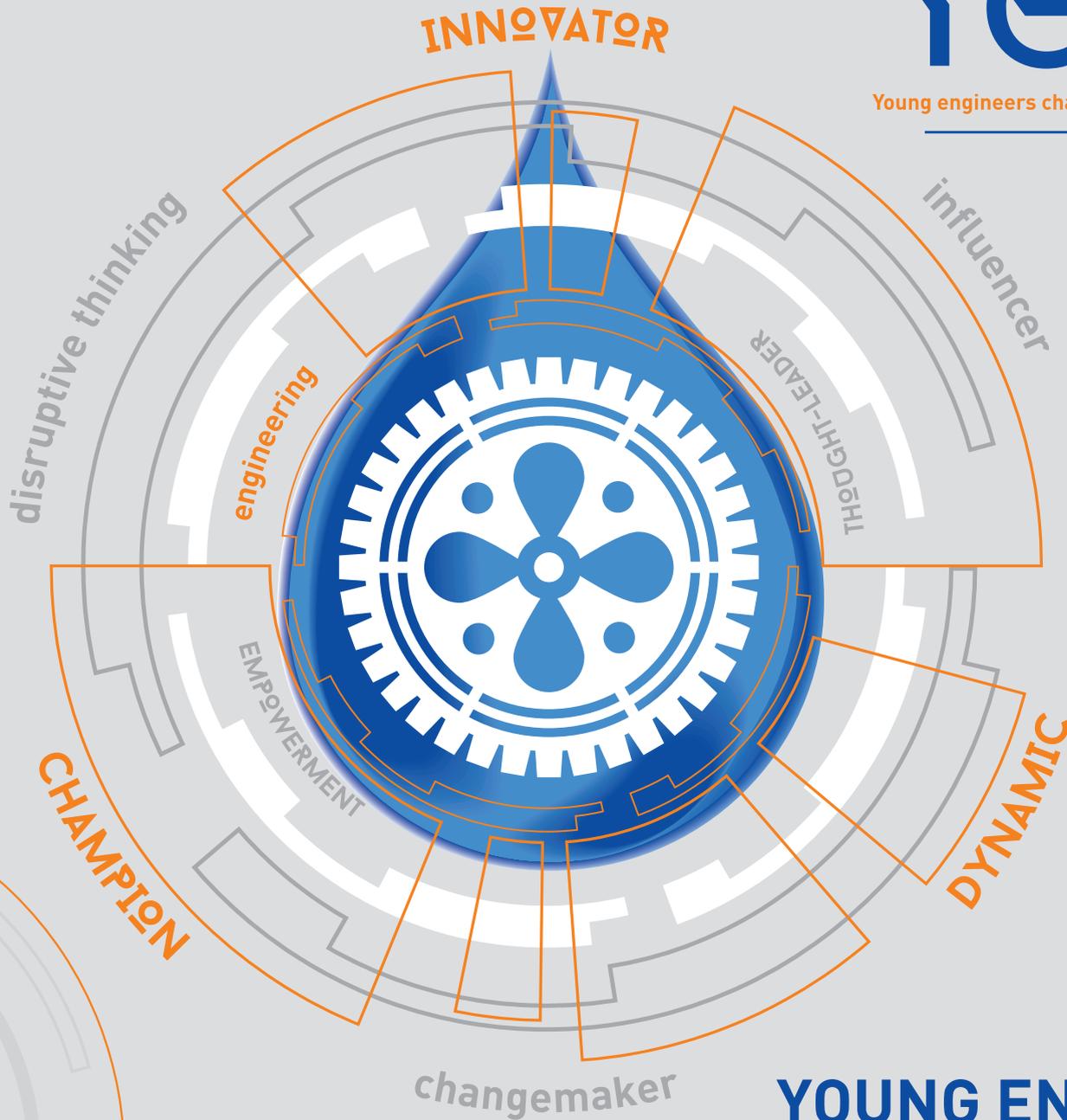


# YECCP

Young engineers changemakers programme



## YOUNG ENGINEERS CHANGEMAKERS PROGRAMME



science, technology  
& innovation  
Department:  
Science, Technology and Innovation  
REPUBLIC OF SOUTH AFRICA



WATER  
RESEARCH  
COMMISSION

wader  
WATER TECHNOLOGIES  
DEMONSTRATION PROGRAMME

A Review



**Obtainable from:**

Water Research Commission  
Private Bag X03  
Gezina  
0031

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## FOREWORD BY THE CEO OF THE WATER RESEARCH COMMISSION

In an era defined by climate uncertainty, rapid urbanisation, and growing demands on finite resources, South Africa's journey toward water security hinges on one critical asset: skilled human capital. As a nation grappling with water scarcity, we recognise that sustainable service delivery is not merely a technical challenge – it is a societal imperative. Local governments, tasked with the vital responsibility of providing water and sanitation services, require engineers equipped not only with technical expertise but also with the vision to innovate, adapt, and lead.

The Water Research Commission (WRC), in partnership with the Department of Science, Technology, and Innovation (DSTI), launched the Young Engineers 'Changemakers' Programme (YECP) five years ago to address this very need. Through our Water Technologies Demonstration Programme (WADER), we sought to empower a new generation of municipal engineers – the frontline custodians of our water infrastructure. The YECP was designed to bridge the gap between theoretical knowledge and real-world application, enabling young professionals to test cutting-edge solutions, refine sustainable practices, and confront the complex challenges of ageing systems, resource scarcity, and equitable service delivery.

Today, we celebrate the YECP's profound impact. Over 80% of its graduates remain in the public sector, driving innovation within municipalities nationwide. Notably, the programme has amplified the voices of black and female engineers, historically underrepresented in science, technology, engineering and mathematics (STEM) fields, fostering a more inclusive and dynamic engineering landscape. Their success stories – from piloting decentralised sanitation technologies to optimising water reuse systems – underscore the transformative power of targeted capacity building.

This booklet captures the essence of the YECP: a testament to collaboration, resilience, and the unwavering commitment of South Africa's youth. As you read these pages, I invite you to reflect on a truth we hold dear at the WRC: 'Water security is not a destination but a continuous journey.' The YECP graduates are our navigators on this journey, blending technical mastery with a deep understanding of community needs. Their work ensures that municipalities are not just service providers but stewards of a resilient future.

To our partners, participants, and supporters: thank you for believing in this vision. Together, we are cultivating a network of innovators who will safeguard South Africa's most precious resource for generations to come.

Dr Jennifer Molwantwa  
Chief Executive Officer, Water Research Commission



# INTRODUCTION

The Water Services Act (Act 108 of 1997) (WSA) alludes to supporting and strengthening the capacity of municipalities to manage their affairs, exercise their powers, and perform their functions.

South African municipalities face a significant skills shortage, particularly in areas like engineering, planning, and information and communication technology (ICT), leading to service delivery challenges and financial instability.

Skills development and training are therefore crucial to address this issue. The Young Engineers 'Changemakers' Programme (YECP) was launched five years ago against this background. This was a new initiative under the Water Technologies Demonstration Programme (WADER) housed at the Water Research Commission (WRC) and funded to date by the Department of Science, Technology and Innovation (DSTI).

The YECP aims to:

- Build capacity in water sectors institutions for innovation;
- Capacitate municipal engineers to gain the necessary knowledge and skills required to drive municipalities of the future which are sustainable, liveable and builds socio-technical infrastructure and services;
- Provide opportunities for young South African engineers to partake in testing potential innovative water and sanitation solutions in real world sites;
- Foster a culture of innovation in water sector institutions/municipalities.

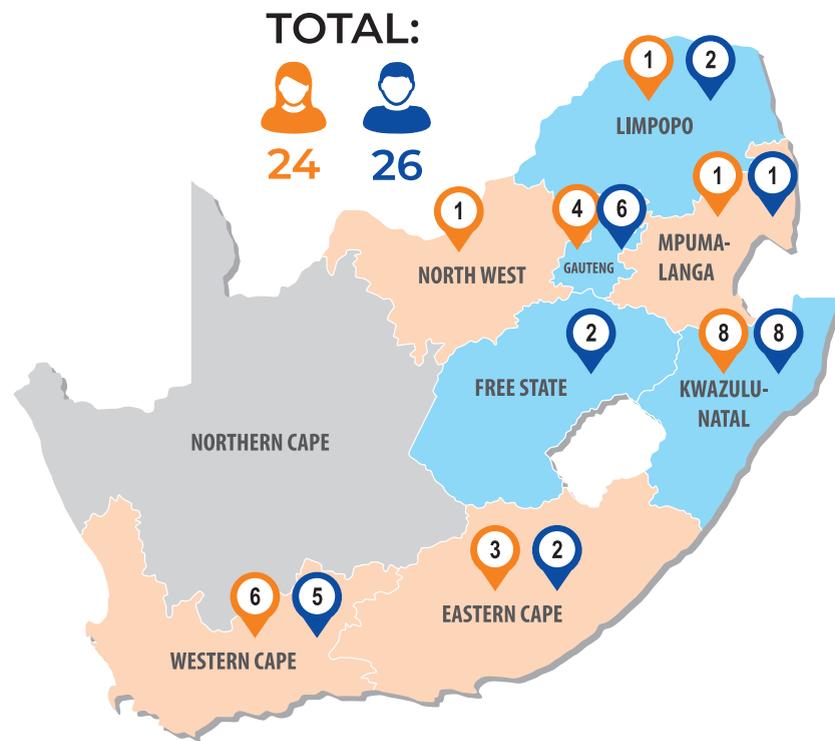
To date, over a five-year period, 50 young engineers (80% black candidates, 48% female and 52% male) representing 21 municipalities have successfully completed the YECP, an exciting one-year capacity building initiative.

They join a growing number of skilled workforce with the talent and knowledge that will transform the water sector, improve the accessibility and delivery of clean water, and help communities to adapt and mitigate the impacts of climate change.

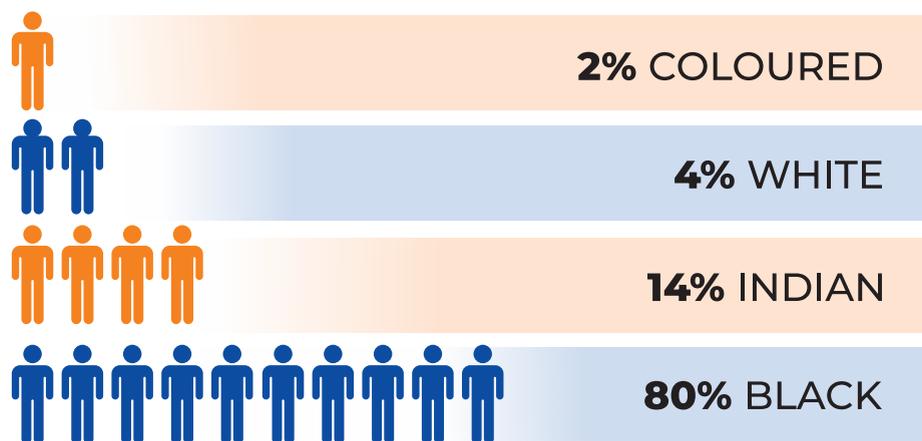
Dr Manjusha Sunil  
WADER Programme Manager



# YECP – FACTS AND FIGURES

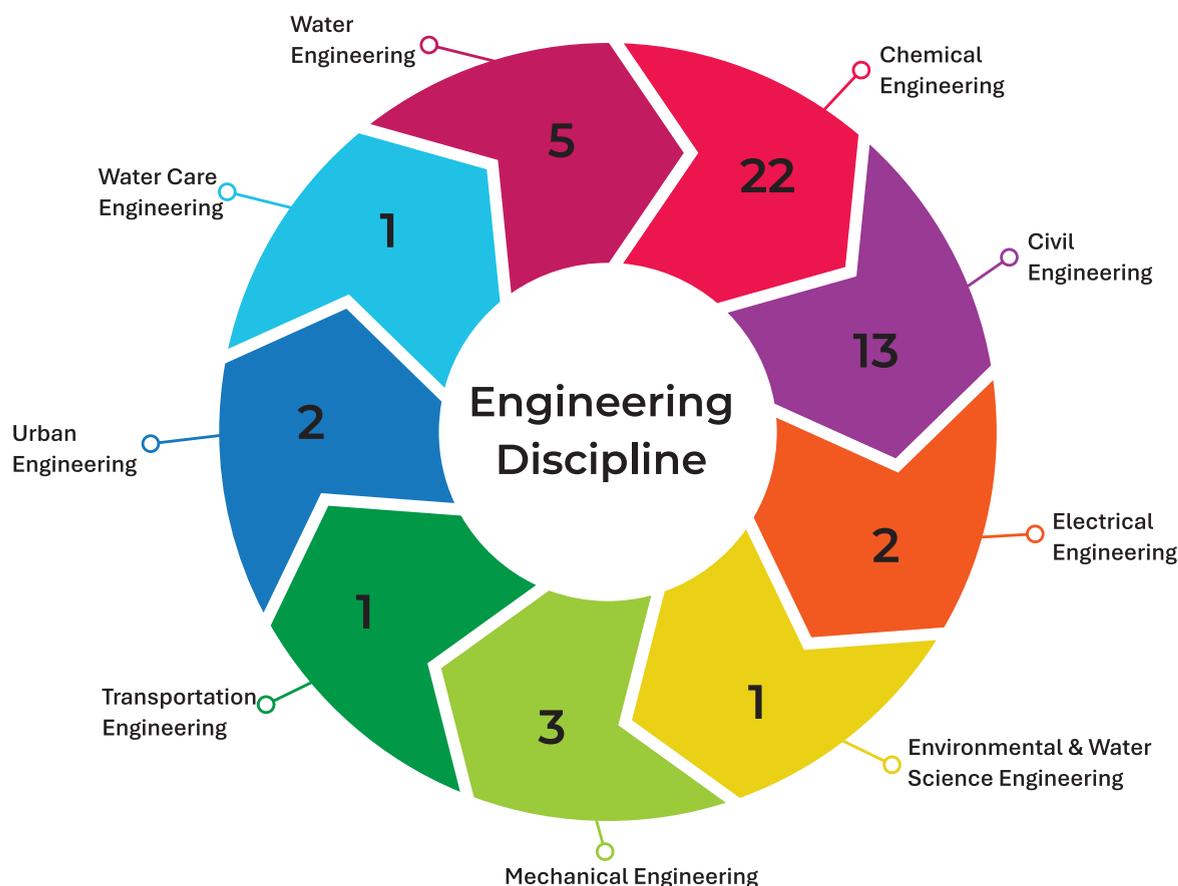


*Young engineers distribution according to province and gender.*



*Racial demographic of young engineers participating in the programme.*

A total of 50 young engineers participated in the programme over the past five years, 26 males and 24 females. The YECP candidates were employed across the country, with most young engineers being employed in KwaZulu-Natal and Gauteng.



*The various engineering disciplines represented by the YECP candidates.*

The majority of the engineers represented the chemical engineering, civil engineering and water engineering disciplines.

During the programme, most of the YECP candidates were employed by metropolitan municipalities, followed by water utilities. It is interesting to note that following their graduation from the programme, the majority (44%) of the engineers have remained in the public sector.

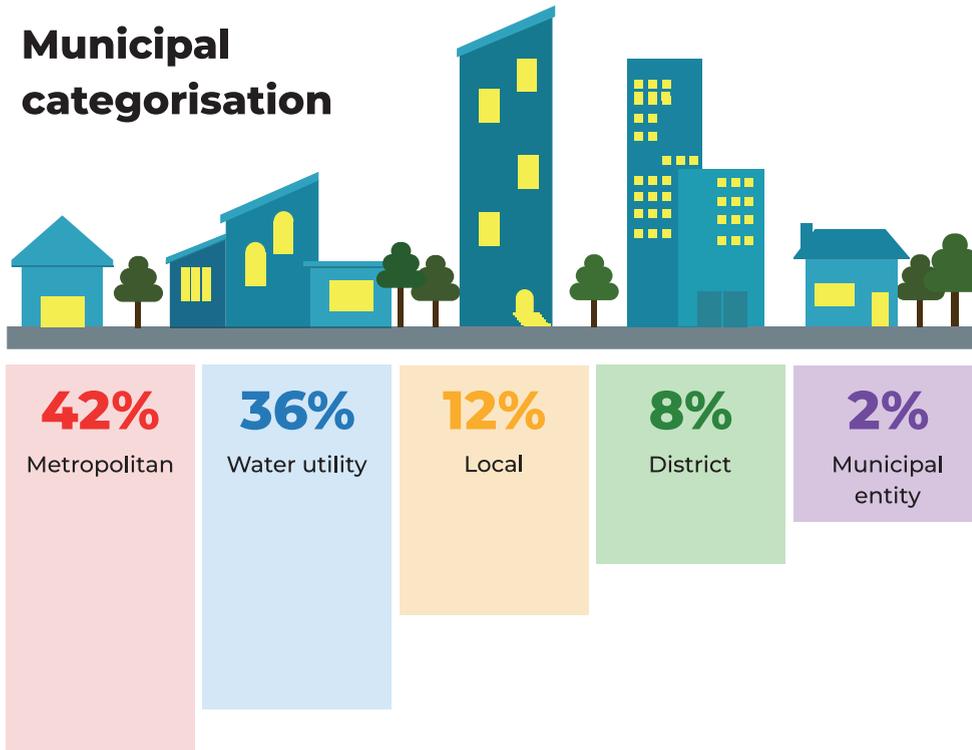
The municipal employers where most of the YECP are currently employed, are listed in Table 1.

**Table 1: Municipal breakdown**

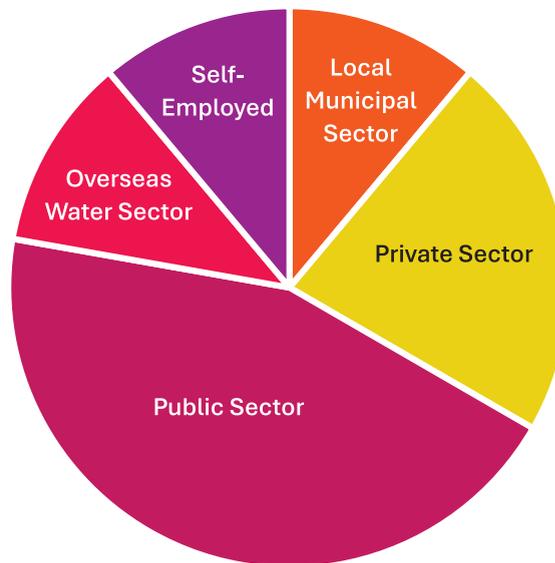
eThekwini Municipality	8
City of Cape Town	8
uMngeni-uThukela Water	8
Johannesburg Water	5
Lepelle Northern Water	2
Rand Water	2
Alfred Nzo District Municipality	2
Stellenbosch Municipality	2
Madibeng Local Municipality	1
City of Ekurhuleni	1
Witzenberg Local Municipality	1
Silulumanzi	1
Matjhabeng Local Municipality	1
Buffalo City Metropolitan Municipality	1
Midvaal Local Municipality	1
Vhembe District Municipality	1
Nelson Mandela Bay Municipality	1
Chris Hani District Municipality	1
Mangaung Metropolitan Municipality	1
Emakhazeni Local Municipality	1
ERWAT	1



## Municipal categorisation



*Most of the YECF candidates were employed by metropolitan municipalities.*



*Most of the YECF candidates are currently employed in the public sector.*



# FEEDBACK FROM THE YOUNG ENGINEERS THAT FORMED PART OF THE PROGRAMME

## EASTERN CAPE



***Reabetsoe Mlimi,  
Alfred Nzo District Municipality***

During the programme I worked for Alfred Nzo District Municipality, but now I own a company called Angela Life Events. Thank you for allowing me to be a part of the YECP. The dedication from the programme team, guidance and support have had a significant impact on my growth and learning. I truly appreciate your commitment to inspiring and shaping the engineers.



***Amanda Mngeni,  
Nelson Mandela Bay Metropolitan Municipality***

I am working in the civil engineering field and am professionally registered with the Engineering Council of South Africa (ECSA). YECP gave me an opportunity to build my network globally, increase my knowledge, as well as gain exposure and, most importantly, build strong professional relations. Being part of YECP is an immense opportunity; to be at the forefront of solving water insecurity. There is no better place to be an agent of change and shape the future of our water sector than as part of a group of likeminded individuals.



***Siyanda Yamba,  
Buffalo City Metropolitan Municipality***

I would like to sincerely thank the WRC for the opportunity to participate in the YECP. The experience was eye-opening — from engaging workshops to real-world challenges that inspired solutions for clean water and sanitation in rural areas like mine. I'm truly grateful for the knowledge gained, connections made, and the drive it gave me to contribute meaningfully.



***Nolusindiso Velebayi,  
Chris Hani Municipality***

I am an electromechanical technician. My duties include operations and maintenance of electrical and mechanical equipment in water and sanitation schemes and plants. What I enjoyed the most about our trip to Singapore was the site visit to the marine barrage where we were able to see Singapore's source of water supply (Imported water, NEWater and desalinated water). I appreciated the beauty and how informative its Sustainable Gallery is. The other thing that I loved about Singapore is how they have invested in green infrastructure.



***Asavela Mpepanduku,  
Alfred Nzo District Municipality***

I am working for Alfred Nzo District Municipality as a Manager: Water Services Provision responsible for the district water and sanitation infrastructure refurbishment and maintenance. During the time of the YECP I enjoyed travelling to Pretoria and staying in very nice hotels with good food and jam, but more especially learning from the WRC presenters and my peers. I believe that it also gave me more confidence in understating and articulating the water service business.

## FREE STATE



***Thabo Mthombeni,  
Matjhabeng Local Municipality***

I am responsible for operations and maintenance of wastewater infrastructure at the Matjhabeng Local Municipality. I acquired rich experience from the programme as it was dealing with wastewater holistically from the planning, design and operation and maintenance stage. The BioWin design software also assisted me to understand wastewater treatment so well, and as a result I am in a better position to operate wastewater treatment works more effectively. I also discovered the role of process engineer as I previously believed only mechanical and civil engineers were needed in these infrastructures.



**Siphon Nxele,  
Mangaung Metropolitan Municipality**

I work in bulk water supply, ensuring system maintenance and water quality compliance. Through YECP, I learned practical tools to improve water supply in small towns. The programme empowered me to contribute more effectively to equitable service delivery.

## GAUTENG



**Reginald Dlamini,  
Rand Water**

In 2023, I transitioned from Rand Water to embark on a career in the oil and gas industry with NATREF. I work as a process engineer, focusing on the production of petroleum products. One of the highlights of my experience with the YECP was the well-structured programmes they offered. These programmes showcased innovative research concepts aimed at addressing water and sanitation challenges, such as water reuse, low-volume toilets, and mobile toilets for rural areas. As someone with a background in water purification, I found it fascinating to learn about the fundamental workings of wastewater treatment plants. Additionally, connecting with fellow engineers from across the country, sharing knowledge, and enjoying some light-hearted moments together was truly memorable.



**Thabo Kabini,  
Johannesburg Water**

During the programme I worked for Johannesburg Water, but now I am a senior specialist for water infrastructure at the Industrial Development Corporation where I am responsible for funding private and public water sector development initiatives across South Africa and the broader African continent. The YECP has armed me with deep knowledge of the water sector, its research trends and associated technologies. It created an ever-lasting love for the water sector.



***Delight Mukwevho,  
Midvaal Local Municipality***

I am the Director: Technical Support Services. With regards to the YECP, I enjoyed the exposure to the different types of water treatment technologies and innovations the programme took us through as it was enlightening and empowering.



***Jaffrey Mutwa,  
Johannesburg Water***

I am working as a new development inspector, and my responsibilities are to ensure that all water and sewer related distribution related infrastructures comply with the standard requirements. What I have enjoyed most about the YECP was the in-depth understanding of water and wastewater treatment process coupled with the utilisation of software to optimise the treatment process and responsible bodies that develop municipal framework and policies. The site visit gave a visual and practical feel of newly innovated systems to accommodate sewage handling and treatment in different locations and settlements.



***Wenzile Shandu,  
Johannesburg Water***

I am an operations manager in the water demand management: physical loss team at Johannesburg Water, focusing on reducing water losses and improving supply efficiency. The YECP programme broadened my perspective on international best practices, fostered invaluable professional networks, and strengthened my leadership and helped reinforce my non-revenue water and wastewater management knowledge and skills.



***Dineo Ramahlo,  
Johannesburg Water***

I am currently working as a civil engineer/technologist within the Engineering Services Unit Department at Johannesburg Water. Being part of the YECP programme (second Cohort) exposed me to different technologies and innovations aimed at improving water and sanitation services given to communities. Moreso, every project I implement now has to be sustainable, improve the quality of life of affected residents, and safeguard the environment. I have also made lifelong friends whose common goal is to add value to the water sector!



***Rendani Thomani,  
Johannesburg Water***

As a development engineering officer at Johannesburg Water, my responsibilities include evaluating and approving township development and land use applications to ensure they meet technical, legal, and regulatory standards, specifically for water and sanitation infrastructure.



***Tshepo Molebatsi,  
Rand Water***

I am employed as a water purification supervisor in Rand Water at Zuikerbosch Water Treatment plant and also studying towards my Master's in Business Administration with North West University. When I arrived at the YECP, I only had one professional certification as a Professional Engineering Technologist (ECSA) and after the programme, I was able to obtain my Professional Process Controller Certification with the Water Institute of Southern Africa, as well as a project management professional (PMP) certification with the Project Management Institute (PMI). In addition, I managed to graduate for my Master's In Engineering (Chemical) in 2023. The programme was an eye opener in that I must not solely focus on skills that are competitive at a domestic scale but, also focus on the global scale. The masterclasses were an inspiration and networking also influenced me to further my studies in Business Administration.



***Limpho Tlaba-Mokoena,  
Ekurhuleni Water Care Company (ERWAT)***

I am currently a process engineer at ERWAT. I really enjoyed the YECP programme because I was able to expand my network and build up my confidence to grow professionally. One key thing I learned was the power of platforms and that even the smallest change can have a great impact in our municipalities.



**Lorato Mabula,  
City of Ekurhuleni**

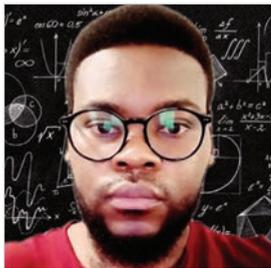
I am working as a senior manager for the Planning Division. My work is centred around compliance, developing and reviewing the department's strategic documents, policies and bylaws. Research, though still new, is also one of my core responsibilities. From YECP: I enjoyed interacting with like-minded young engineers and exploring issues and possible solutions from a different perspective. The programme reinvigorated my passion for engineering and its core principle of problem solving. I learned the importance of collaboration, which is why I hope to build a solid and continued relationship between my department and the WRC, as well as municipalities whose representatives I was able to engage with during the YECP 2024.

## KWAZULU-NATAL



**Siyabulela Mkhize,  
uMngeni-uThukela Water**

During the project I worked for uMngeni-uThukhela Water but I now work for Bidvest Tank Terminals. I would like to express my sincere gratitude to all the seasoned speakers for their immense technical prowess and knowledge imparted on me and for providing their invaluable guidance. Highlights of the YECP for me were knowledge dissemination on wastewater technology, water demand management tools (particularly, the Red Book and Green Book) and water sensitive design in ensuring water conservation, as well as non-revenue water in the context of No Drop certification for municipalities to adopt these guidelines to ensure water resource efficiency. I will always utilise the skills and knowledge cultivated from the programme, as it focused on critical concepts, which seeks to sustainably deal with challenges faced by the South African water and sanitation sector. It was truly an honour and great privilege.



**Nkanyiso Shabalala,  
uMngeni-uThukela Water**

During the programme I worked for uMngeni-uThukela Water, but I am currently working as a process engineer for Sasol in Sasolburg, Free State. I provide technical support to the production team in the ethylene producing plant. During my time in the YECP programme, I enjoyed the masterclass and site visits. I learned how to use BioWin software and I was inspired by innovations I saw during the site visits. Above all, it was an honour to network with other young engineers from all corners of South Africa and professionals who offered invaluable knowledge and experience.



***Dhiven Naidoo,  
eThekwini Municipality***

I am a mechanical engineer working at eThekwini Municipality: Water and Sanitation. My work involves operations, such as maintenance activities, and capital projects, such as functional upgrades to pump stations and treatment works. The Masterclass aspect of the YECP was invaluable to me as an engineer in the wastewater space. I have been utilising the skills gained in the Masterclass in the work I perform at wastewater treatment works.



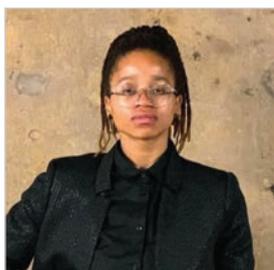
***Nastashia Moodley,  
eThekwini Municipality***

I am currently leading projects aimed at upgrading water infrastructure to enhance service delivery. In addition, I am collaborating closely with my supervisors and relevant departments to address and reduce non-revenue water by developing action plans for initiatives to be implemented. I've greatly enjoyed connecting with like-minded individuals and learning about advanced technologies that can help conserve water.



***Lungelo Nzama,  
eThekwini Municipality***

I am employed with the Water and Sanitation Unit of eThekwini Municipality as a civil engineer in the Wastewater Design Branch, where I specialise in sewer reticulation projects and improvements to water and wastewater treatment works. I appreciated the YECP's enlightening conversations about water-sensitive urban planning and innovative water management techniques. Attending the YECP led me to seek more knowledge in water quality engineering. I am currently enrolled with the University of Cape Town to do my Master's In Water Engineering. The significance of incorporating nature-based solutions for sustainable water infrastructure was one of my main takeaways in this programme.



***Snenhlanhla Malakoana,  
eThekwini Municipality***

I work as a civil engineer in the Water Planning branch at eThekwini Municipality's Water and Sanitation Unit, focusing on bulk water-supply assessments and long-term infrastructure planning. I enjoyed the YECP programme's insightful discussions on water-sensitive urban design, innovation in water management, and the opportunity to connect with professionals from municipalities across South Africa. One key takeaway for me was the importance of integrating nature-based solutions for sustainable water infrastructure.



**Lenesh Sukhlal,**  
**eThekweni Municipality**

I am employed as an area manager in the Wastewater Planning department, where I am responsible for overseeing the long-term planning and development of sanitation infrastructure within the municipality. One of the key aspects I appreciated about the YECP programme was the opportunity to engage with a diverse group of participants, as well as the chance to interact with the programme facilitators and presenters. From a learning perspective, the programme showcased the innovative solutions that are available to address the daily challenges that we face. It also reinforced the importance of maintaining an open-minded approach and recognising that conventional methods are not always the only viable options.



**Megan Dharmalingum,**  
**eThekweni Municipality**

I am a civil engineer at eThekweni Municipality, where I am engaged in a range of public-private partnership projects, including initiatives related to wastewater reuse, desalination, and renewable energy. I have appreciated the opportunity to network and observe the implementation of wastewater reuse practices across South Africa, and I am eager to apply these solutions within eThekweni Municipality.



**Nomvelo Ndlovu,**  
**eThekweni Municipality**

I am working as a works superintendent looking after four wastewater treatment works. It has been an amazing experience as progressing from working as a technician and to apply techniques attained from YECP. YECP has provided a rare, splendid opportunity for young engineers within municipalities to learn and create a sustainable, liveable and builds socio-technical infrastructure and services.



**Zodwa Mpungose,**  
**eThekweni Municipality**

I am working as a senior chemical technician in the Treatment Works branch within eThekweni Water and Sanitation. My job description includes process optimisation, compilation of contract documents, managing projects, conducting risk assessments, reporting writing and ensuring compliance with regulatory requirements. The YECP was such an exciting and insightful experience where I got to learn how different municipalities tackle challenges within their operations. I got to meet a diverse group of young engineers and shared ideas which equipped me for the current position I occupy at eThekweni municipality. I am very grateful for the experience.



### **Nosipho Mzobe, uMngeni-uThukela Water**

I am working at Umgeni–uThukela Water as a process engineer, specialising in wastewater treatment. The YECP has afforded me the opportunity to engage with other peers, building professional relations which have extended beyond the programme.



### **Kerisha Nayager, uMngeni-uThukela Water**

I currently work as a senior process technician. I have worked with wastewater and direct potable reuse and being a part of the YECP has helped me to better understand these initiatives and apply myself more practically. YECP has given me the confidence to explore opportunities and gain networking skills.



### **Lindokuhle Sibiya, uMngeni-uThukela Water**

The YECP programme has enhanced my understanding of the importance and objectives of wastewater treatment and the regulation governing it. The programme has also enhanced my practical skills when it comes to troubleshooting and maintaining water and wastewater system within our organisation since I'm classified as Class V Process Controller by the Department of Water and Sanitation.



### **Azrah Ismail, uMngeni-uThukela Water**

As a young professional engineer in the YECP, I was exposed to cutting-edge water and sanitation technologies within municipalities. I developed problem-solving skills, worked with innovative water solutions, and tackled real-world infrastructure challenges. The programme also provided mentorship, networking opportunities, and professional growth, helping me become a leader in sustainable water management. By the end, I was well-equipped to drive technological innovation and efficiency in South Africa's water sector.



***Nhlanzeko Dlamini,  
uMngeni-uThukela Water***

I am a chemical engineering graduate. I am responsible for technical support to wastewater treatment plants. The YECF for me was just amazing from the boot camp; meeting different young professionals in the sector; engaging on different challenges each person faces; and finding out some are common. The highlight would have to be going to New York and seeing their wastewater plants. I was impressed at how intentional process operators were about process control. How they would be cognisant of the sludge age, and different parameters that in most South African treatment works would only be known by engineers if at all. It was also interesting to find out that we are actually in the same calibre as them when it comes to wastewater treatment. I would have liked to see their dams and the interventions they do to keep them so clean that they only disinfect water and not treat for turbidity. It is really hard to sum up the experience in a few words. I think the best thing to say is more young people must come and experience the programme themselves. For young engineers in the water sector I would say this is one that ranks very high amongst those few.



***Tashmira Ramjan,  
uMngeni-uThukela Water***

I am working in the aluminium industry; however, I was a graduate trainee at uMngeni-uThukela Water during my time in the YECF programme. I enjoyed how integrative the programme was in joining engineers from across different municipalities and how focused it was on our skills upliftment and knowledge expansion. It gave me a deeper appreciation for our water treatment sector and understanding of the complexities we face in our country, and also sparked a passion in me to hopefully one day rejoice and positively contribute towards our water treatment sector.

## LIMPOPO



***Awelani Mandavha,  
Lepelle Northern Water***

During the programme I worked for Lepelle Northern Water, but now I am a project manager at Mikovhe Electrical. I truly valued being part of a group of bright young minds and having the opportunity to share and exchange innovative ideas. I have developed skills in teamwork and communication, while gaining practical experience that bridges the gap between theory and impact.



***Funani Ramalamula,  
Vhembe District Municipality***

During the programme I worked for Vhembe District Municipality, but now I am a senior advisor at the South African Local Government Association (SALGA) responsible for trading services (water, sanitation, energy, electricity and waste management) in Limpopo. I enjoyed the entire programme from the bootcamp, masterclasses, local technical visits and the international study tour. I learned to be innovative, to inspire change and to be the change in local government as well as the importance of collaboration.



***Gladwin Gundo Motsoare,  
Lepelle Northern Water***

I am currently a project engineer at Lepelle Northern Water. I am a professionally registered technologist with the Engineering Council of South Africa. I am responsible for engineering expert advice on the Lepelle Northern Water supply scheme related to both the infrastructure development, operations and maintenance. The YECF programme gave me exposure to the various technologies that are available for a reliable, sustainable and efficient supply of water to the people of South Africa. I have also received exposure to how other countries, like Singapore and Thailand, manage technologies and how they are forever innovating in providing solutions.

## **MPUMALANGA**



***Thabo Maubane,  
Silulumanzi***

I am employed as a non-revenue water supervisor, where I oversee water loss monitoring and implement initiatives to minimise losses within our water systems. What I enjoyed most about the YECF programme was the wealth of knowledge shared throughout the course and the opportunity to network with everyone involved, including the organisers, fellow YECF participants, and the guest presenters, who generously shared their expertise.



***Elsie Kekana ,  
Emakhazeni Local Municipality***

During the programme I was working for Emakhazeni Local Municipality, but I am currently appointed as Director: Technical and Engineering Services in Thaba Chweu Local Municipality, Mpumalanga. Participating in the YECP was a transformative experience, allowing me to connect with professionals from various municipalities around the country. I also developed a broader perspective on the water and sanitation landscape, particularly during our enriching study tour to New York. This exposure has contributed to my growth, enabling me to climb the corporate ladder.

## **NORTH WEST**



***Avheani Mulaudzi,  
Madibeng Local Municipality***

I am working as a senior process controller (shift supervisor). My time at the YECP was efficient, it helped me broaden my interest in the water industry.

## **WESTERN CAPE**



***Nada Sechoaro,  
City of Cape Town***

I currently manage a refuse transfer station in the City of Cape Town. The YECP experience was so fantastic. The programme exposed me to innovative sustainable solutions that are impactful, leaving the end users with dignity and sustainable sanitation. My biggest takeaway was that no idea is too small, and that practises such rainwater harvesting can be highly beneficial to some communities.



***Luleka Ntsaluba,  
City of Cape Town***

I am a process technician in a wastewater treatment plant, responsible for optimising resource utilisation, ensuring compliance with regulatory standards, and improving plant efficiency. In the YECP programme I appreciated the opportunity to collaborate with industry experts and explore innovative water and sanitation solutions. In addition, the programme strengthened my understanding of resilient and sustainable municipal services.



**Nichilis Tredoux,  
City of Cape Town**

I am a senior professional officer at the City of Cape Town's Bulk Water Branch. I am part of the Infrastructure & Project Implementation, which implements the large water treatment and conveyance infrastructure for the city. Currently, I am working on the City's first permanent desalination plant. The YECP exposed me to new technology and innovative ideas that could be implemented at our municipality. I also enjoyed meeting engineers from other municipalities and sharing ideas.



**Niven Moodley,  
City of Cape Town**

I am a professional officer in the Water & Sanitation Directorate at the City of Cape Town, responsible for implementation of capital projects, focusing on planning, design, and implementation of sewer network rehabilitation using trenchless technologies. The YECP programme provided a valuable platform for engaging with industry experts, exchanging ideas with like-minded peers, and gaining hands-on exposure to innovative water and sanitation solutions. The international study tour was a highlight, broadening my perspective on global best practices.



**Nosisa Nqayi Zincume,  
City of Cape Town**

I am a scheme manager in the Bulk Water Storage and Conveyance section, responsible for the Newlands, Wynberg, and Molteno reservoirs, along with the five dams on Table Mountain. The YECP programme enhanced my understanding of the water sector and the social challenges faced by South African communities. The masterclass improved my skills and reinforced my motivation to research wastewater design and modelling, leading to the successful completion of my Master's degree. I appreciate the WRC team for providing this opportunity, which has facilitated the development of a valuable professional network.



**Noma Africa Mbeje,  
City of Cape Town**

I am working as a technician at Potsdam Wastewater Treatment Works, where I oversee the operation of wastewater treatment works and make process adjustments if and when required. The YECP programme introduced me to innovative wastewater treatment methods that could be implemented in my municipality. I particularly enjoyed connecting with industry experts and researchers, learning from their experiences, and engaging with like-minded individuals from diverse backgrounds in group activities and problem-solving challenges.



### **Sinazo Nkunzi,** **City of Cape Town**

I am working as a process technician in a wastewater treatment plant. I was a process controller during my time at the YECP programme. Being part of the YECP programme has been a game changer for me, not only because of the knowledge I obtained but also by being selected as a candidate for such an incredible programme for young engineers. It changed my perspective of how I view myself. I learnt a lot about continuous improvement, the need for change makers in the water and sanitation industry, and my role as an engineer in the industry. I can now gracefully and confidently take on projects and challenges, question abnormalities in the process as well as not just monitor and accept things as they are, I, investigate, propose and implement changes because I understand why it is important for my plant to comply. I learnt and got inspired a lot by the innovations to improve water quality, to recycle and reuse water as well as the BioWin software. I am grateful for the opportunity to partake in your programme and I share it with pride with my colleagues who are still longing for growth and are passionate about our kind of work.



### **Unathi Jonginamba,** **City of Cape Town**

I work in water demand management: policy and regulation for the City of Cape Town, where I regulate privately owned water and wastewater package plants and enforce the wastewater and industrial effluent bylaws as well as the stormwater management bylaw. I gained valuable knowledge on wastewater treatment processes through the YECP programme, particularly during the wastewater masterclass, which provided in-depth insights into treatment processes and technologies. I also enjoyed the international trip to Thailand and Singapore, where I explored advanced water and sanitation innovations implemented by the two countries, and the local site visits, which showcased how South African companies are contributing to improving water and sanitation in the country.



### **James Brassell,** **City of Cape Town**

I am a wastewater process technician at Potsdam Wastewater Treatment Works in Cape Town. I thoroughly enjoyed the YECP experience, being part of the first group of students. Being flown out on planes and staying in nice hotels and eating good food with friendly people, it really was great. Learning all about the South African water network, civil construction, registering with ECSA and my favourite was working with the design programme BioWin. The professor from the USA was so intelligible about wastewater, where I ended up. I fell sick during the programme though and didn't make the international visit but I have nothing but good thoughts about the programme.



**Marquin Pieterse,  
Witzenberg Local Municipality**

I am the Senior Engineering Technician in the Witzenberg Local Municipality responsible for all water- and sewer-related activities and projects. What I found to be profound about the YECP is the engagements with my fellow YECP participants as well as other relevant stakeholders. Also, the insight and knowledge shared from other engineers to broaden our understanding.

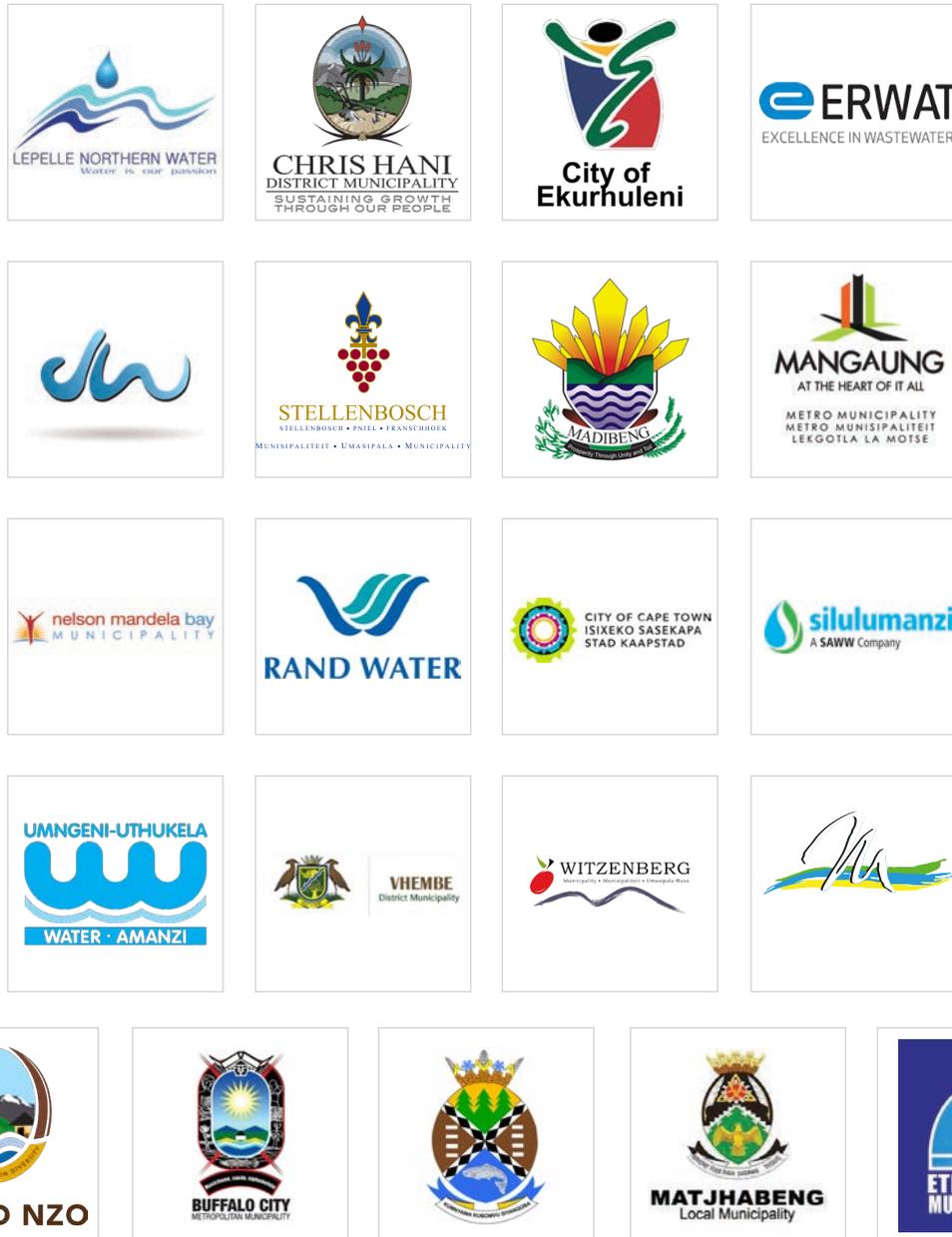


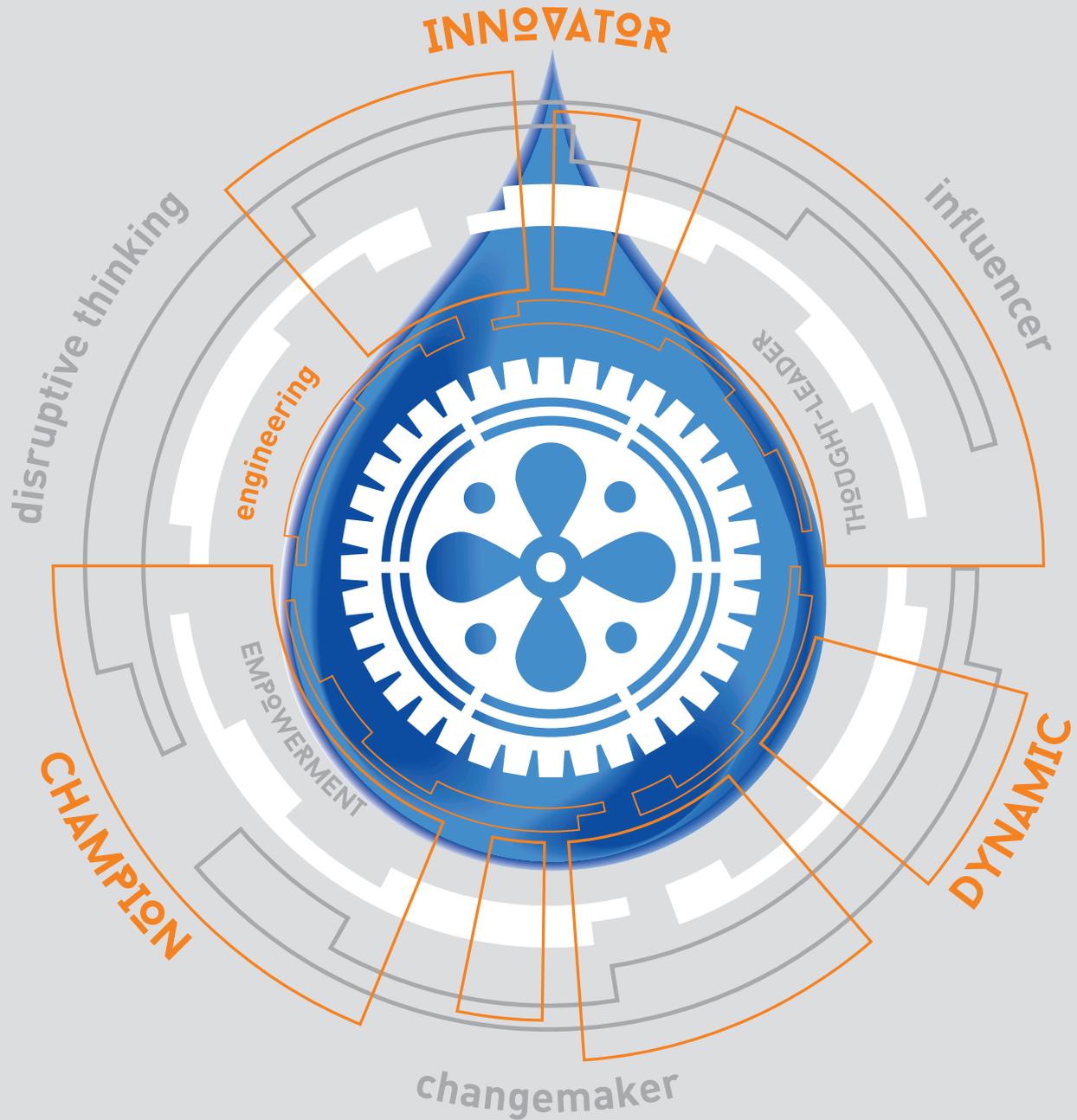
**Dzino Mutyorauta,  
Stellenbosch Municipality**

During the programme I worked for Stellenbosch Municipality but now I work as a project engineer for Guernsey Water, in the Sates of Guernsey, the Channel Islands. As a project engineer in the Capital Delivery Department, I manage engineering projects related to water and wastewater infrastructure to ensure long-term benefits for Guernsey Water, in terms of the strategic directive or corporate plan of the organisation. I thoroughly enjoyed the YECP as it broadened my knowledge about the water sector and its value chain, and it exposed me to aspects of water engineering that I had not practiced in previous roles, such as wastewater treatment.



# PARTICIPATING ENTITIES





science, technology  
& innovation  
Department:  
Science, Technology and Innovation  
REPUBLIC OF SOUTH AFRICA



**wader**  
WATER TECHNOLOGIES  
DEMONSTRATION PROGRAMME

**Yecp**  
Young engineers changemakers programme