DBSA

Funded by the EU
Delegation to South Africa

THE IIPSA ECOLOGICAL INFRASTRUCTURE PROJECT FOR THE PALMIET CATCHMENT 1N-36478

Palmiet Enviro-Champs Programme Close-out Summary Report

FINAL

GT0965

MARCH 2023

GroundTruth

Water, Wetlands and Environmental Engineering

Head Office KwaZulu-Natal

P.O. Box 916, Hilton 3245, South Africa
Tel: +27 33 343 2229 - Fax: +27 86 599 2300
admin@groundtruth.co.za
www.groundtruth.co.za

Title	THE IIPSA ECOLOGICAL INFRASTRUCTURE PROJECT FOR THE PALMIET CATCHMENT 1N-36478 Palmiet Enviro-Champs Programme Close-out Summary Report
Report Issue	FINAL
Consultant Ref Number	GT0965 MARCH 2023
Prepared by	GroundTruth Water, Wetlands and Environmental Engineering
Author(s)	Ayanda Lepheana
	Catherine Meyer
Document Reviewer	
Prepared For	ETHEKWINI MUNICIPALITY ENVIRONMENTAL PLANNING & CLIMATE PROTECTION DEPARTMENT BIODIVERSITY | CLIMATE | PEOPLE DBSA Development Bank of Southern Africa

COPYRIGHT

INDEMNITY

The project deliverables, including the reported results, comments, recommendations, and conclusions, are based on the author's professional knowledge, as well as available information. The study is based on assessment techniques and investigations that are limited by time and budgetary constraints applicable to the type and level of survey undertaken. GroundTruth therefore reserves the right to modify aspects of the project deliverables if and when new/additional information may become available from research or further work in the applicable field of practice or pertaining to this study.

GroundTruth exercises reasonable skill, care, and diligence in the provision of services; however, GroundTruth accepts no liability or consequential liability for the use of the supplied project deliverables (in part, or in whole) and any information or material contained therein. The client, including their agents, by receiving these deliverables, indemnifies GroundTruth (including its members, employees, and sub-consultants) against any actions, claims, demands, losses, liabilities, costs, damages and expenses arising directly or indirectly from, or in connection with services rendered, directly or indirectly, by GroundTruth.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ACRONYMS

COP	Conference of the Parties
CSW	eThekwini Municipality Department of Cleansing and Solid Waste
DWS	eThekwini Municipality Department of Water and Sanitation
EI	Ecological Infrastructure
FEWS	Flood Early Warning System
IAPs	Invasive Alien Plants
IDP	Integrated Development Plan
IIPSA	Infrastructure Investment Programme for South Africa
NQF	National Qualifications Framework
PCRP	Palmiet Catchment Rehabilitation Project
QTY	Quantity
SANBI	South African National Biodiversity Institute
SMMEs	Small-medium micro-enterprises
TRMP	Transformative Riverine Management Programme
UKZN	University of KwaZulu-Natal

1. INTRODUCTION

The Palmiet Enviro-Champs programme forms part of Deliverable 1: Community Based River Management of the Infrastructure Investment Programme of South Africa (IIPSA) Ecological Infrastructure (EI) project. The aim of Deliverable 1 is to develop a community-based river monitoring programme to track and improve the status of the river health in the Palmiet Catchment, as well as build capacity, create employment opportunities, and ensure inclusivity for all catchment stakeholders. Thirty-one people have been trained as Enviro-Champs under the Palmiet IIPSA EI project. An Enviro-Champ is a person who works for the common-good in his or her own area. Such people are community-spirited and seek to care for, and uplift, their local communities, including a mixture of adults (>35 years) and youth (18-35 years), who were unemployed before signing up to the project.

The Enviro-Champs work by identifying environmental challenges and working with the authorities to address and over-come them. Such challenges include service delivery issues, pollution and environmental degradation, water quality and report leakages, burst pipes and overflowing sewers. They also conduct river clean-ups and visit households to raise awareness about water and sanitation, and river health issues. Enviro-Champs are strongly committed to community relationships and environmental education. They are also committed citizen scientists, gathering, analysing, and reporting their findings with the real purpose of finding solutions.

This report provides a summary of work undertaken by the Palmiet Enviro-Champs between August 2019 and October2022, covering selection and enrolment, training, project activities and achievements, social impacts, lessons learnt, how the programme has changed the lives of those involved and considerations of sustainability for work using the Enviro-Champ model.

2. ENROLMENT AND EMPLOYMENT

Starting the Palmiet Enviro-Champs programme required a framework for the initial education and recruitment of Enviro-Champs in the region. This followed the defined process used for selecting and recruiting suitable Enviro-Champs when establishing the initiative in the Mpophomeni township in KwaZulu-Natal. The process entailed engaging with identified agencies and communities, ward councillors and representatives. A detailed set of criteria were developed to facilitate an objective and unbiased selection of Enviro-Champs to represent the entire catchment (e.g. geographic location, skills and, personality traits, etc.).

2.1 Outcomes

During the course of project, a total of 31 Enviro-Champs were selected through the above selection process. Out of the 31 Enviro Champs selected, 17 (55%) were females and 14 (45%) were males as shown in Figure 2-1. During selection, effort was made to ensure, at a minimum, female gender parity.

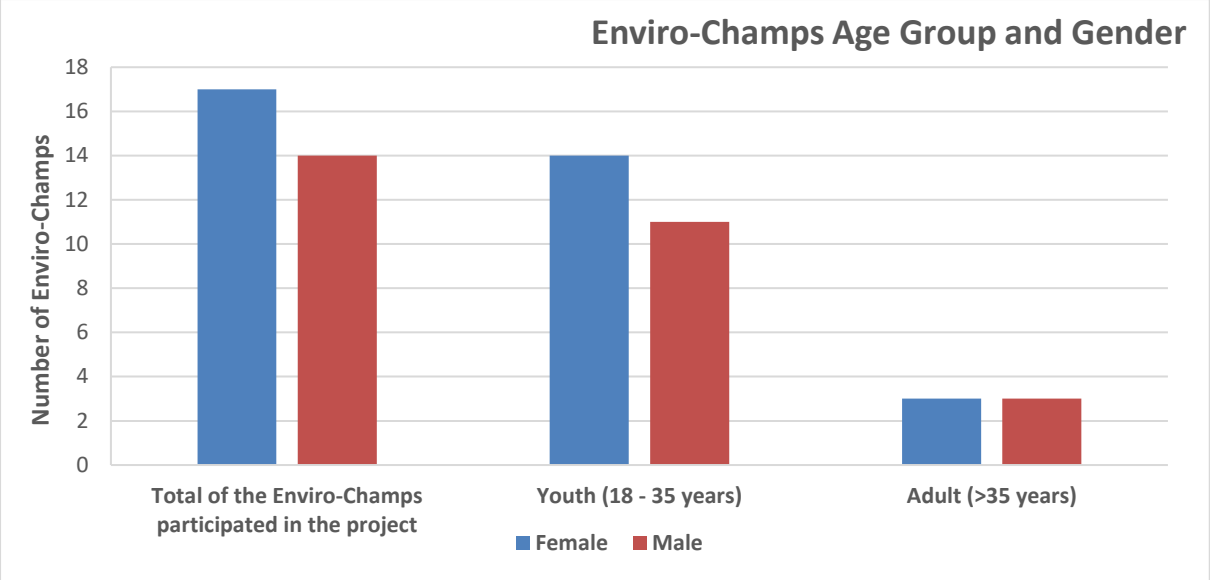


Figure 2-1 Enviro-Champs participated in the project in terms of age group and gender

Seventeen Enviro-Champs were selected from Ward 23; 11 from Quarry Road Informal settlement and six from Rainbow Ridge informal settlement (Figure 2-2). Eleven candidates were selected from Ward 92; nine coming from the Ezinyosini settlement and two from Dukezwe settlement. Three candidates were selected from Zamokuhle settlement, all from Ward 19.

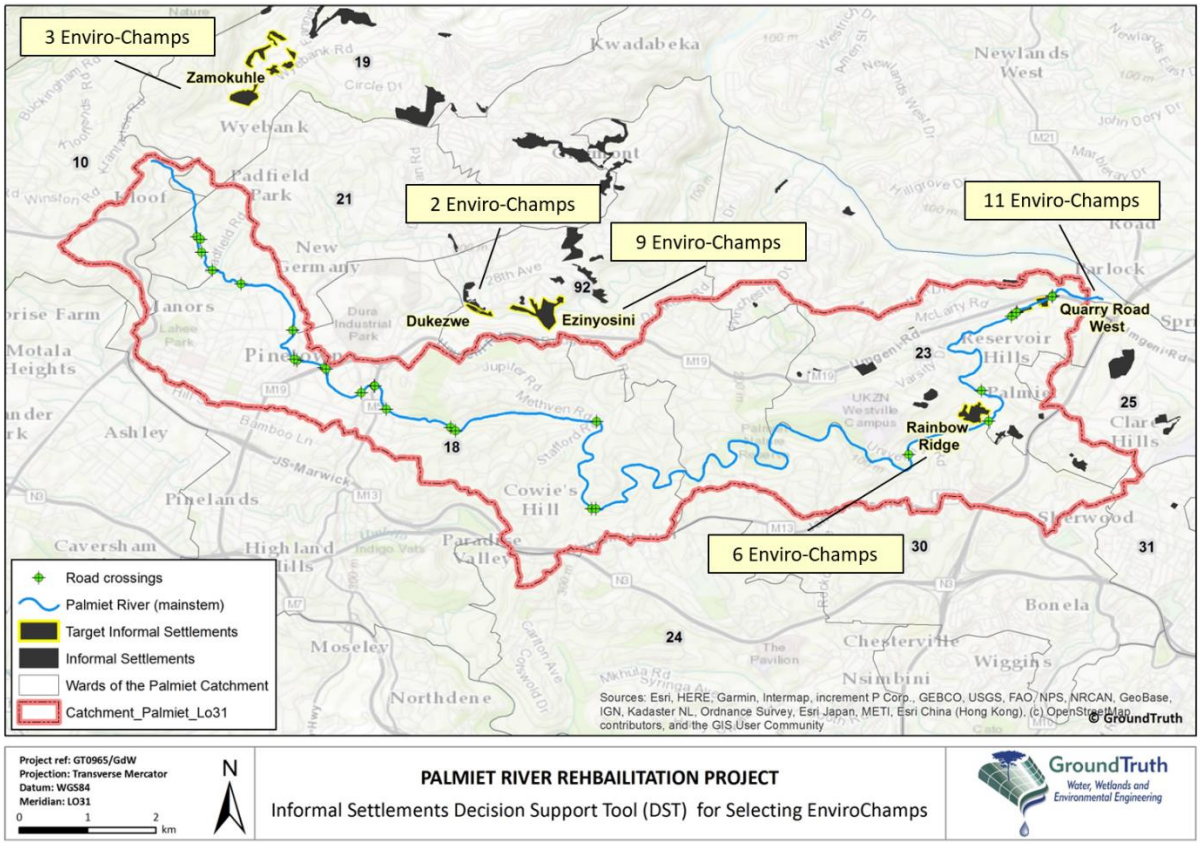


Figure 2-2 Distribution of Palmiet Enviro-Champs residing in informal settlements in and around the Palmiet Catchment

All the selected Enviro-Champs met the selection criteria, particularly Grade 10 as an entry level, which was set as a pre-requisite for accredited National Qualifications Framework (NQF) level 2 training Figure 2-3 below shows the Enviro-Champs level of Education. Nearly 90% of the selected Enviro-Champs have Grade 12 certification.

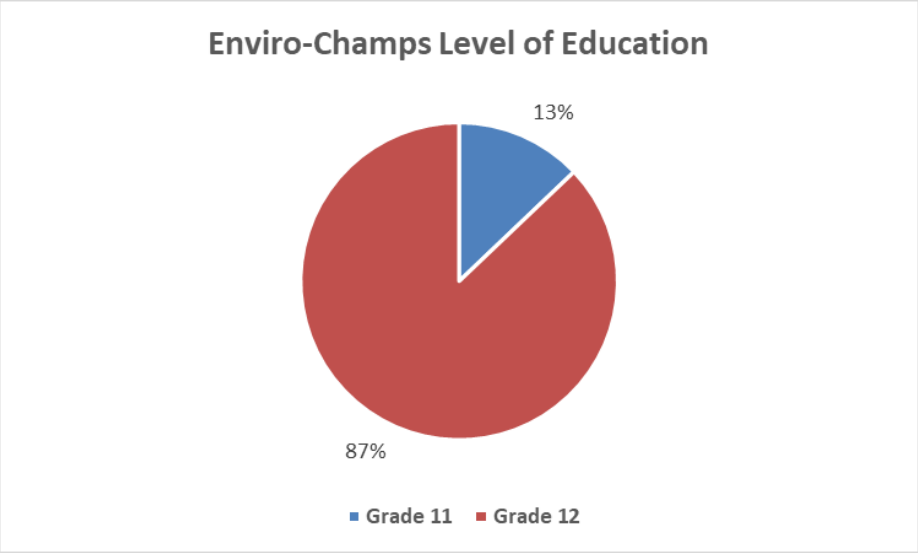


Figure 2-3 Enviro-Champs Level of Education

The selection criteria provided a fair opportunity for people to express themselves and establish the meaning and their understanding of the Enviro-Champs movement. This allowed the candidates to share their stories and experiences. More simply put, stories are a way of knowing. Telling stories is essentially a meaning-making process. When people tell stories, they select details of their experience from their stream of consciousness. In order to give the details of their experience a beginning, middle and end, people must reflect on their experience. It is this process of selecting constitutive details of experience, reflecting on them, giving them order and thereby making sense of them that makes telling stories a meaning-making experience. This enabled the project to select good candidates for the job. Figure 2-4 below shows the Enviro-Champs during the recruitment process.

Figure 2-4 Enviro-Champs during the recruitment process

3. TRAINING

3.1 Non-accredited training

The effects of COVID-19 penetrated every facet of human life and, for us, working with the Palmiet Enviro-Champs movement, the effects were enormous. It is said that knowledge springs from discontinuities; it certainly did in the Palmiet Enviro-Champs training programme. The training programmes had to be re-shaped from face-to-face learning systems to online learning. This led to the development of some remarkable innovations, specifically the use of WhatApp for training purposes. WhatsApp allows for instant messaging and can be used to record voice notes, share photographs and videos as well as enable video calls. This proved to be a significant breakthrough for the community-based learning processes.

The Enviro-Champs attended the Introduction to Aquatic Ecology Course which offered an excellent example for observing the Enviro-Champs conducting the 'each one, teach one' intervention. The experienced Enviro-Champs were given the opportunity to train, educate and assist the newer recruits. It was interesting to observe the Enviro-Champs growing as a leadership community that freely shares simple ideas and sound and useful solutions. The highlight of the workshop was that it allowed the team to directly engage in discussion through community-based participatory dialogues. Everyone could share their insights and engage in dialogue processes to further clarify what they were trying to share and understand.

The Enviro-Champs attended the Learning Exchange Workshops in Mpophomeni. The workshops enabled social learning processes between the three different Enviro-Champ nodes (Palmiet, Mpophomeni and Howick). The workshops also enabled us to observe and assess our discussions for evidence of social learning. It also enabled the Palmiet Enviro-Champs to experience the Mpophomeni Enviro-Champs work, first-hand, and gain an understanding of the role that Enviro-Champs play in Mpophomeni, along with the tools they currently use. The workshops generated joint discussion between the groups and identified learning opportunities for the Palmiet Enviro-Champs. It also established how the Enviro-Champs tools/approaches may be adapted for use in the Palmiet River Catchment. Figure 3-1 shows the Enviro-Champs interacting during the Learning Exchange Workshop in Mpophomeni Township.

Figure 3-1 Enviro-Champs during Learning Exchange Workshop

The Palmiet Enviro-Champs have attended 170 training days. The training included empowering Enviro-Champs with knowledge so that they can share the information during door-to-door activities. This knowledge will be invaluable beyond the finite time of the project. By running non-accredited training for Palmiet River Catchment local community members, basic competencies were developed that enabled them to address environmental issues in a more informed and confident way. The Enviro-Champs have thus contributed significantly to their own enrichment and training and that of their fellow candidates. This was made possible by the training approach adopted, which included questions-based learning, cultural, and indigenous practices as well as intergenerational knowledge sharing. The trainings included some of the following subjects:

- Code of conduct
- Introduction to Aquatic Ecology
- Waste management
- Riparian Health Audit tool
- Grassland study
- MiniSASS and using all the citizen science tools
- Snake Awareness
- Conducting water testing in the Palmiet River Catchment
- Learning the names of indigenous trees (in the field)
- Learning to record, edit and make a video on environmental problems in the community.
- Data collection and completion of in-field GeoODK Collect forms.
- COVID-19 and toolbox training
- Illegal sand mining (facilitated by the Institute of Natural Resources)
- Invasive alien plants (IAPs)
- Local environmental challenges

GroundTruth also identified a non-accredited training opportunity in the form of Agroecology, which had a prominent element of enterprise (co-operative) establishment and the related entrepreneurial skills (terms and conditions, funding, etc.). This was specifically selected to inspire and assist the Enviro-Champs with planning their own businesses/co-operatives. Agricultural aspects covered included organic food/farming, different types of farming, genetically modified organisms; fertilizer and how to make it; bees and how to produce honey, plant nurseries, how one can start a nursery and what can be planted. The main challenge identified was availability of land to initiate such activities.

3.2 Accredited training

In supporting and building capacity of the Enviro-Champs to increase their employability past the lifespan of the IIPSA EI project, GroundTruth investigated accredited training courses in line with the basic trainings they have received as well as group interest.

The Enviro-Champs have completed the following accredited courses namely, basic plumbing, basic first aid, herbicide application for the control of IAPs, brushcutter and chainsaw machinery handling and operation for the clearing of IAPs. The details of these are included in Table 3-1 below.

Table 3-1 Identified accredited and non-accredited training courses

Training and Career Stream Course	NQF Level	Credits	Programme	Qty
Herbicide Application Training	2	3	Skills programme	9
First Aid Level 1	2		Skills programme	10
Domestic Plumbing Skills	4	57	Skills programme	5
Brush Cutter Training	2	5	Skills programme	10
Chainsaw Training	2	4	Skills programme	10*

* Only 6 of the 10 candidates were found to be competent

Table 3-2 Photographs of Enviro-Champs during training

Online Enviro-Champs training revisiting Codes of Conduct	
	
Sewer layout In field training	**Snake Handling**
	

4. ACHIEVEMENTS

The Palmiet Enviro-Champs engaged in specific activities throughout the working week. The overall programme statistics are provided in Table 4-1 below and include all candidates that came through the programme.

4.1 Sewer infrastructure monitoring

The Enviro-Champs undertook monitoring of sewer lines and surcharging manholes in close proximity to the Palmiet River once a week. The Enviro-Champs have monitored 51 manholes in the catchment and 23 manholes outside of the catchment.

Figure 4-1 illustrates the:

1. Number of sewer reports in the catchment.
2. The most common causes of sewer problems.
3. Total days spilling per manhole.
4. Heat-map of problem areas in respect to sewer problems.

Table 4-1 Palmiet Enviro-Champ summary statistics

Issues monitoring (days)	184
River Health monitoring (days)	65
Door-to-Door education (days)	89
Training (days)	170
Clearing of dump sites (days)	10
Palmiet River clean up (days)	55
Visiting organizations (days)	15
Workshop (days)	6
Reporting & research (days)	9
Total no. of person days	8 320
Water leak incidents reported	257
Sewer leak incidents reported	537
Illegal dumps sites observed	248
No. of refuse bags collected	4039
Households visited	5816
Public/ community meetings	3

The findings are summarised as follows:

- The Enviro-Champs have monitored 72 spilling manholes in the catchment and 85 spilling manholes outside of the catchment.
- The Enviro-Champs have reported 452 spilling manhole incidents in the catchment.
- Within the catchment, all the incidents were reported in the lower reaches of the Palmiet Catchment in Ward 23 (304 reports), Ward 25 (157 reports), Ward 92 (40 reports) and Ward 30 (19 reports), within the suburbs of Reservoir Hills and Clare Hills, respectively.
- Most of the incidents were rectified except manhole municipality ID No. is F6839. manhole in Palmiet Zone 1, located near Palmiet Road and three sewer lines crossing the Palmiet River.
- Manhole F6839 has been spilling continuously from January 2021 to October 2022 (close to 600 days). The manhole has been reported 50 times over a period of 14 months.
- The sewer lines have been reported more than 30 times in six months.
- Infrastructure failure (52% of reports), household solid waste (42% of reports), and building material (5% of reports) were the most common causes of manhole blockages.

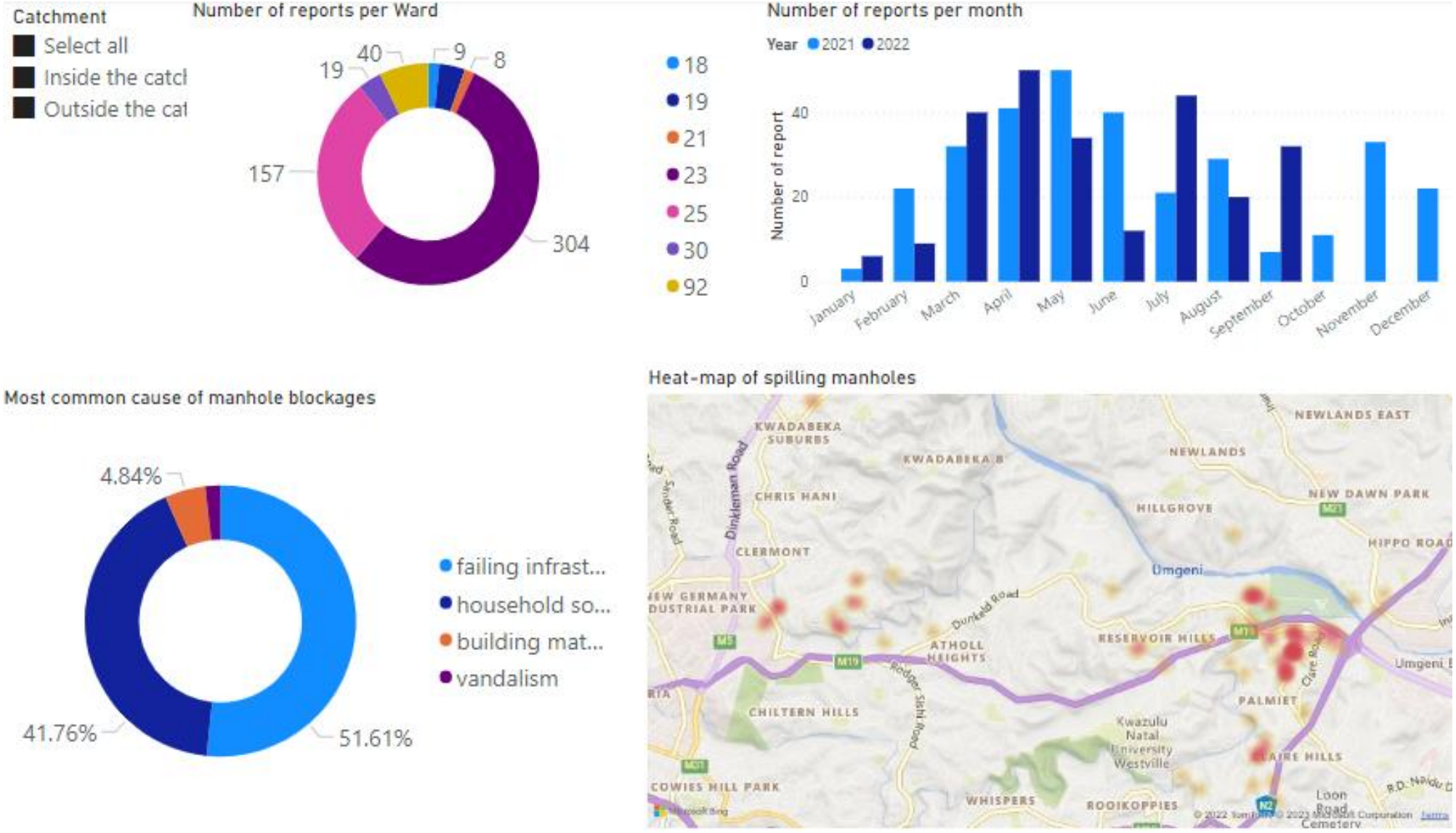


Figure 4-1 Dashboard summary of sewer infrastructure issues within the Palmiet Catchment

Sewer monitoring challenges

The first challenge was that the manhole numbering used by the Enviro-Champs is not the same as that of the municipality. Since most of the manholes have not been numbered by the municipality, it makes it difficult for the plumbers to locate the manholes to rectify the problems.

The second challenge was that the Enviro-Champs used different cell phone versions to capture data. The GeoODK App does not perform uniformly across all phone versions leading to varied, inaccurate location results.

The Enviro-Champs only received airtime for six months to contact eThekwini Municipality to report sewer spillages incidents. In most cases the Enviro-Champs were using their own airtime to contact eThekwini Municipality. It has been difficult to report the surcharging manholes incidents on time because the Enviro-Champs do not always have airtime.

Plumbers often do not respond immediately when an incident is reported. Furthermore, when plumbers do arrive, they are often unable to locate the incident themselves, and must rely on Enviro-Champs to guide them to the site of the incident. This can result in Enviro-Champs needing to abandon other scheduled work to assist plumbers with previously reported incidents.

A meeting was held with the eThekwini Department of Water and Sanitation (DWS) to discuss collaboration and support for the Enviro-Champs in 'closing the loop' for reporting on and rectifying spilling/blocked manholes. An internal follow up meeting within eThekwini Municipality was suggested. It was decided that all the important role players (water pollution control officer, etc.) be invited from DWS.

Table 4-2 below shows the problematic sewage infrastructure in the catchment, specifically in O'Flaherty Road and near Palmiet Road (Palmiet Zone 1). The former was reported and fixed, whilst the latter is reported frequently and requires urgent attention.

Table 4-2 Problematic manholes in the lower catchment

Problematic manhole in O'Flaherty Road	
	
Before repair	**After repair**
Problematic Sewer Lines crossing Palmiet River	
	
Raw sewage from the pump station at Methven Road	Sewer Lin near UKZN nursery
Problematic manhole in Palmiet Zone 1 near Palmiet Road	
	

4.2 Potable Water Leaks ("War on Leaks")

The Enviro-Champs monitored for water leaks once a week. They visited houses randomly to get an idea of the extent of water leaks in the area. The Enviro-Champs also made efforts to assist with rectifying the leaks –five Enviro-Champs have completed NQF Level 4 plumbing training.

Figure 4-2 illustrates the:

1. Number of water leaks reported on the municipality and privately owned land.
2. Number of water leaks recorded per Ward.
3. Most common cause of water leaks.
4. Heat-map indicating the problem areas in respect to water leaks.

The findings of the data are summarised as follows:

- There were 257 potable water leaks recorded in the catchment between February 2021 and October 2022.
- Approximately 93% of the water leaks were on municipal land. For most of these, the Enviro-Champs could not detect the cause of the underground water leaks.
- The cause of the water leaks was unknown for almost 36% of the reported incidents, while nearly 30% were the result of leaking water meters.
- Approximately 67% of water leaks were recorded in Ward 23. This is the result of the catchment containing more than half of Ward 23's total land area. Also, Ward 23 has a lot of informal settlements where communal taps are mostly used. Most of the leaks were located within Clare Hills suburb, along O'Flaherty and Quarry Roads.

The Enviro-Champs reported 51 water leak incidents outside of the Palmiet catchment. These were mostly in Ward 92. Most of the water leaks were fixed by the end of September 2021.

Figure 4-3 overleaf represents the estimated non-revenue water in the catchment between February 2021 and February 2022.

Figure 4-3 illustrates the:

1. Non-revenue water on municipal and privately owned land.
2. Non-revenue water per ward.
3. Most common causes of non-revenue water.
4. Heat map indicating where the water leaks were recorded.

.

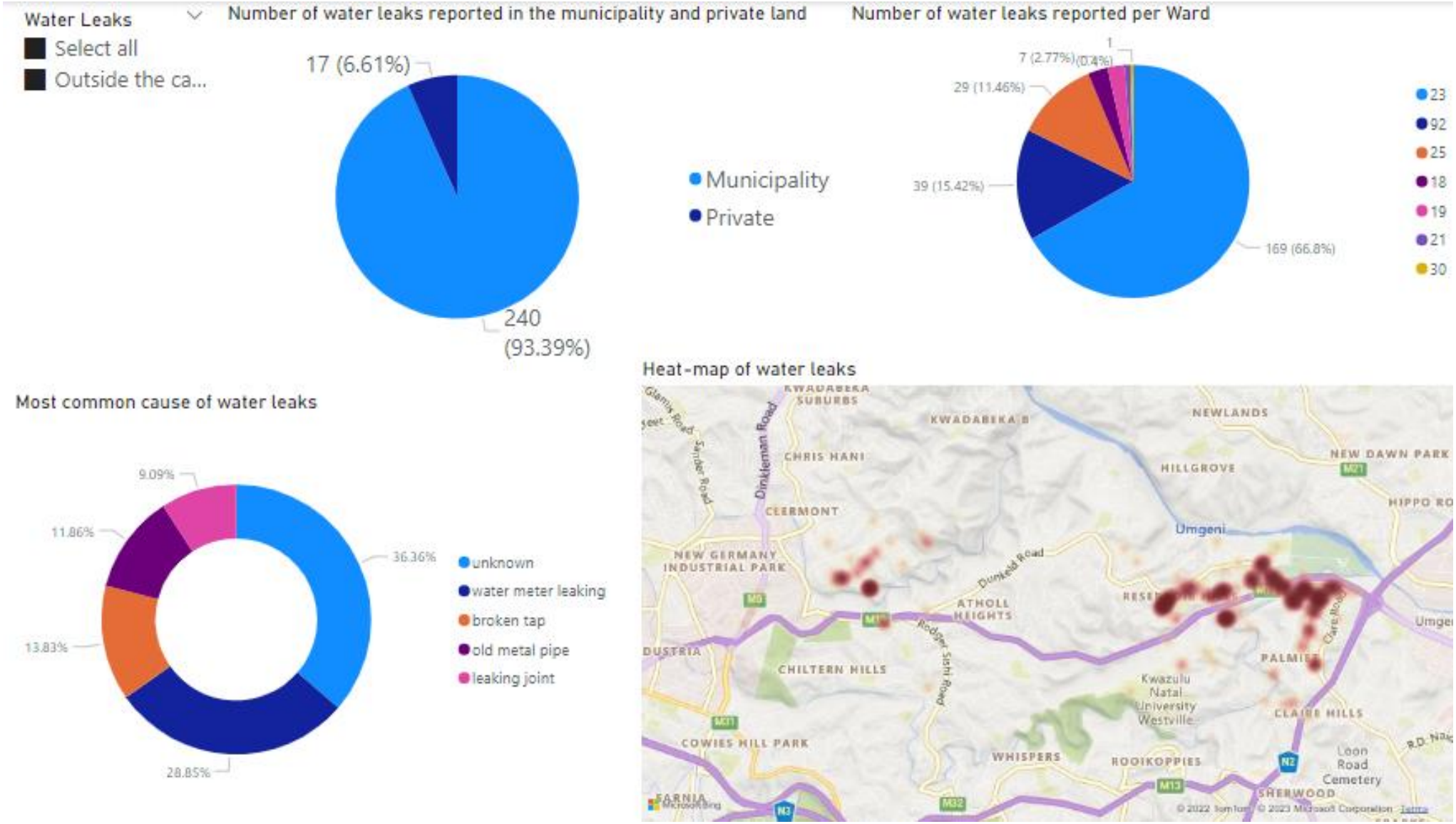


Figure 4-2 Dashboard summary for water leaks recorded in the Palmiet Catchment

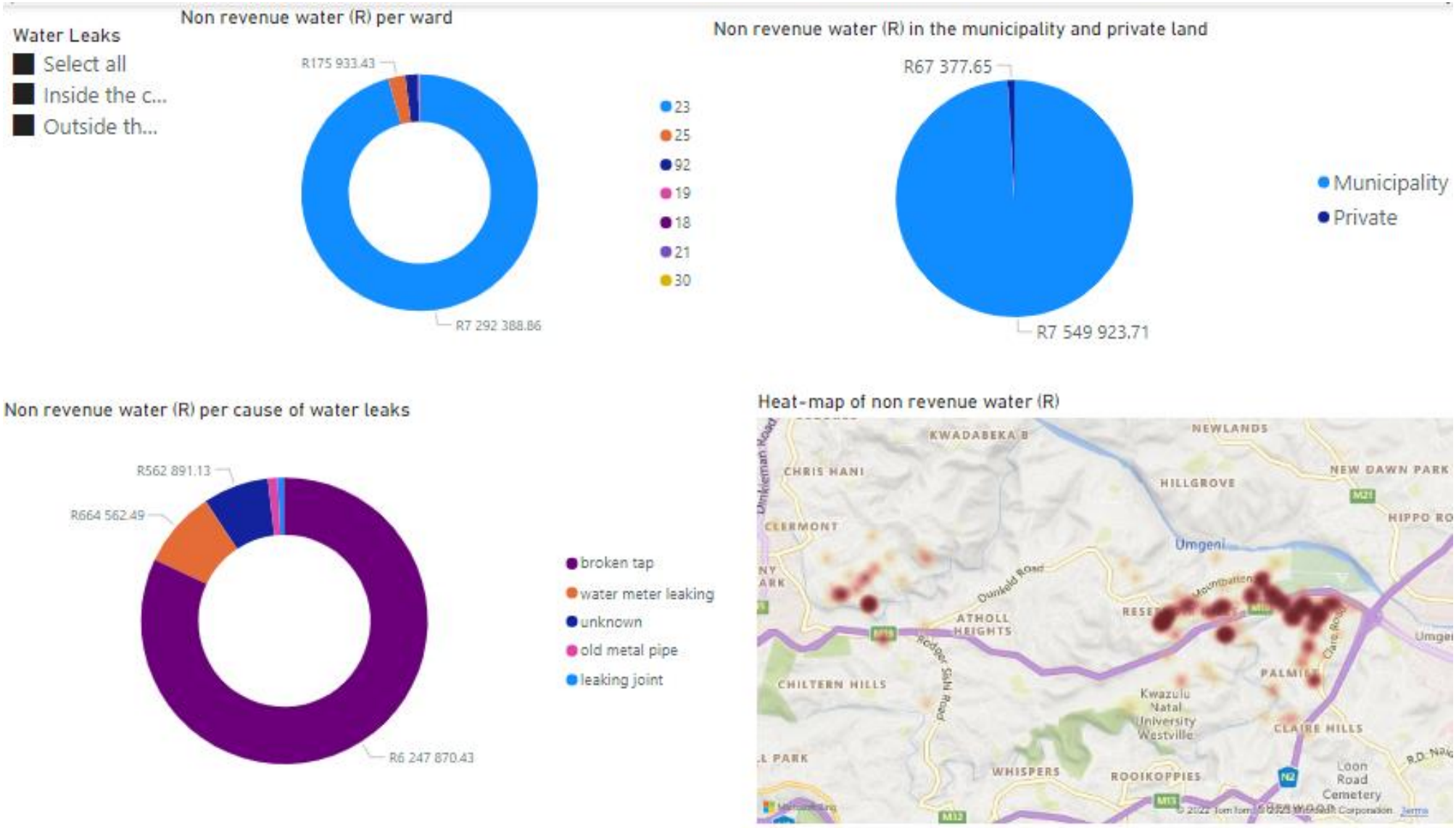


Figure 4-3 Dashboard summary of non-revenue water implications reported in the Palmiet Catchment

The findings are summarised as follows:

- Nearly R 8 million worth of non-revenue water was recorded by the Enviro-Champs in two years.
- This data in no way represents the total non-revenue water in the catchment because close to 35% of the water leaks could not be measured for water loss because the cause was unknown.
- The primary location of non-revenue water was in municipal-owned land.
- Just over R 7 million in non-revenue water was recorded within Ward 23.
- Broken taps were the most common cause of the highest amount of non-revenue water.

The Enviro-Champs have recorded approximately R155 000 of non-revenue water outside of the Palmiet Catchment. Leaking water meters were the most common source of non-revenue water.

Table 4-3 Biggest water leak on Spencer Road

Water leak near on Spencer Road	Municipality contractors fixing water leak on Spencer Road
	

Water leaks monitoring challenges

The main challenges were the same as the sewer monitoring challenges The GeoODK App's performance and results varied according to the operating system and individual phone, and plumbers do not respond immediately when incidents are reported.

4.3 Measure, Audit and Clean-Up of Illegal Dump Sites

Figure 4-4 below illustrates the:

1. Number of illegal dump sites recorded by the Enviro-Champs in each Ward.
2. Type of waste by percentage in the catchment.
3. Number of illegal dump sites cleared.
4. Heat-map indicating the location of problem areas.

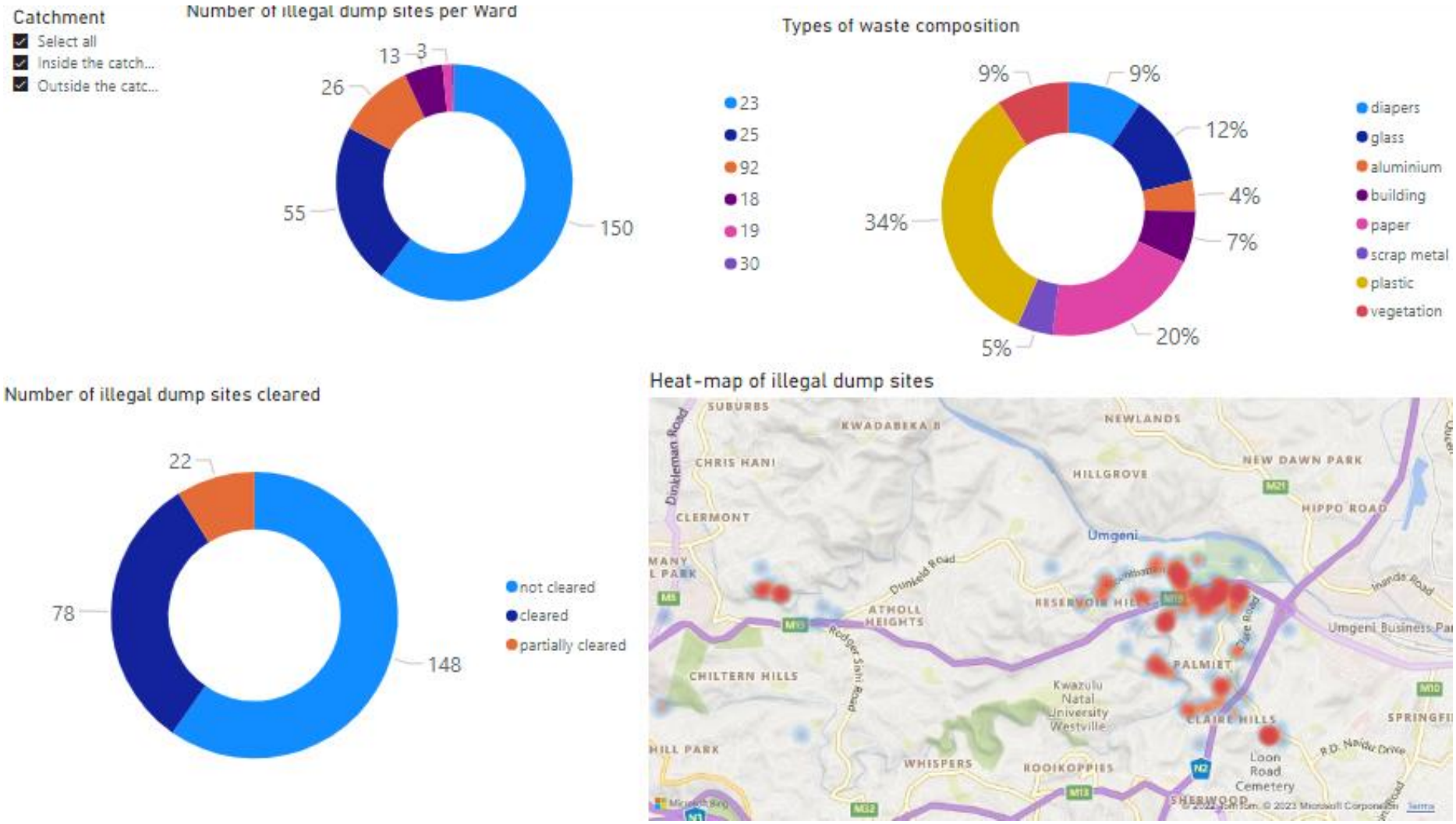


Figure 4-4 Dashboard summary of the illegal dump site monitoring within the Palmiet Catchment

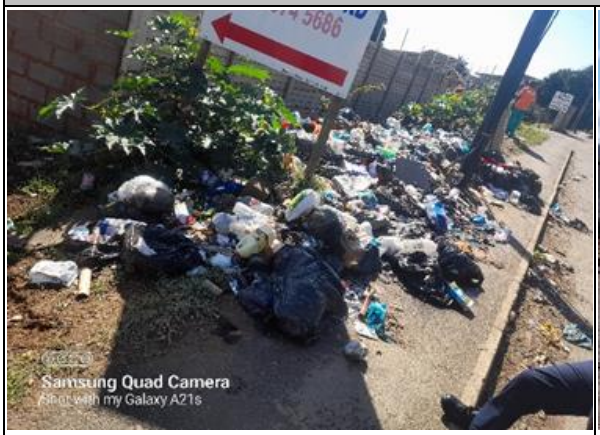
The findings are summarised as follows:

- 247 illegal dump sites were recorded. Approximately 60% of illegal dumps site were recorded in Ward 23. This is the result of the catchment containing more than half of Ward 23's total land area. Ward 25 contained 20% of illegal dumps, the next largest number of illegal dumps.
- Nearly 75% of the waste was recyclable material (scrap metal, plastic, paper, glass and aluminium).
- Nearly 35 % of the waste material was plastic, followed by paper, making up 20%.
- Approximately 70% of the illegal dump sites were not cleared. This high proportion was due to the absence of a designated waste collector.
- The heat-map shows all the illegal dump sites and indicates that 82% were located within the lower Palmiet catchment, close to the informal settlements.

In addition, the Enviro-Champs have monitored 41 illegal dumps sites outside of the Palmiet Catchment as part of their initial training and along their daily normal transport routes to and from the catchment. These were in Ward 18, 19, 23, 25 and 92.

Table 4-4 below shows some illegal dump sites cleared by the Enviro-Champs together with community members and eThekwini Municipality Durban Cleansing and Solid Waste (CSW) Department.

Table 4-4 Before and after photographs of illegal dump clearing

Illegal dump site clearing on Morewood Road	
	
Before	**After**
Illegal dump site clearing on the corner of Quarry Road and Clare Road Number of rubbish bags collected: 88	
	
Before	**After**

Illegal dump site monitoring challenges

The major setback to conducting illegal dump clearing was the absence of a designated waste collector; the waste from previous clean ups had not been collected for months. The absence of waste removal merely compounds the problem with residents adding more waste to perceived waste collection point, and it also results in low team morale as the efforts of the Enviro-Champs appear to be in vain.

This challenge was resolved in August 2021 through the collaborative effort of GroundTruth, eThekwini Environmental Planning and Climate Protection Department, and the eThekwini CSW. These parties met to discuss the collaboration and support for the Enviro-Champs in clearing of illegal waste.

4.4 Biomonitoring and Industry Water Quality Monitoring

The Palmiet Enviro-Champs have conducted 65 days of river health monitoring. The river health monitoring included the use of citizen science tools such as MiniSASS, clarity tube, velocity plank and riparian health audit. This data has been collated with other biomonitoring data into a separate river health report.

In addition, the Enviro-Champs conducted four days of surface water sampling for COVID 19 research with Durban Green Corridor.

4.5 Door to Door Dialogue and Community Learning

Through the door-to-door process, Enviro-Champs engaged in dialogue with the communities to discover and unpack local socio-environmental challenges (e.g. solid waste dumping, reporting of surcharging sewage, investigation of household water leaks etc.). This initiative gives community members an opportunity to engage in discussions about their daily socio-environmental challenges and provides potential solutions together with the Enviro-Champs.

The household visits were conducted in ten wards (10, 18, 19, 21, 23, 24, 25, 30, 31 and 92). A total of 5 750 home visits were recorded during door-to-door engagements and educational visits. These visits included the 750 households visited outside of the Palmiet Catchment.

Figure 4-5 illustrates the:

1. Number of door-to-door visits per Ward.
2. Number of door-to-door visits and distribution of pamphlets.
3. Number of households receiving refuse bags.
4. Location of the households visited.

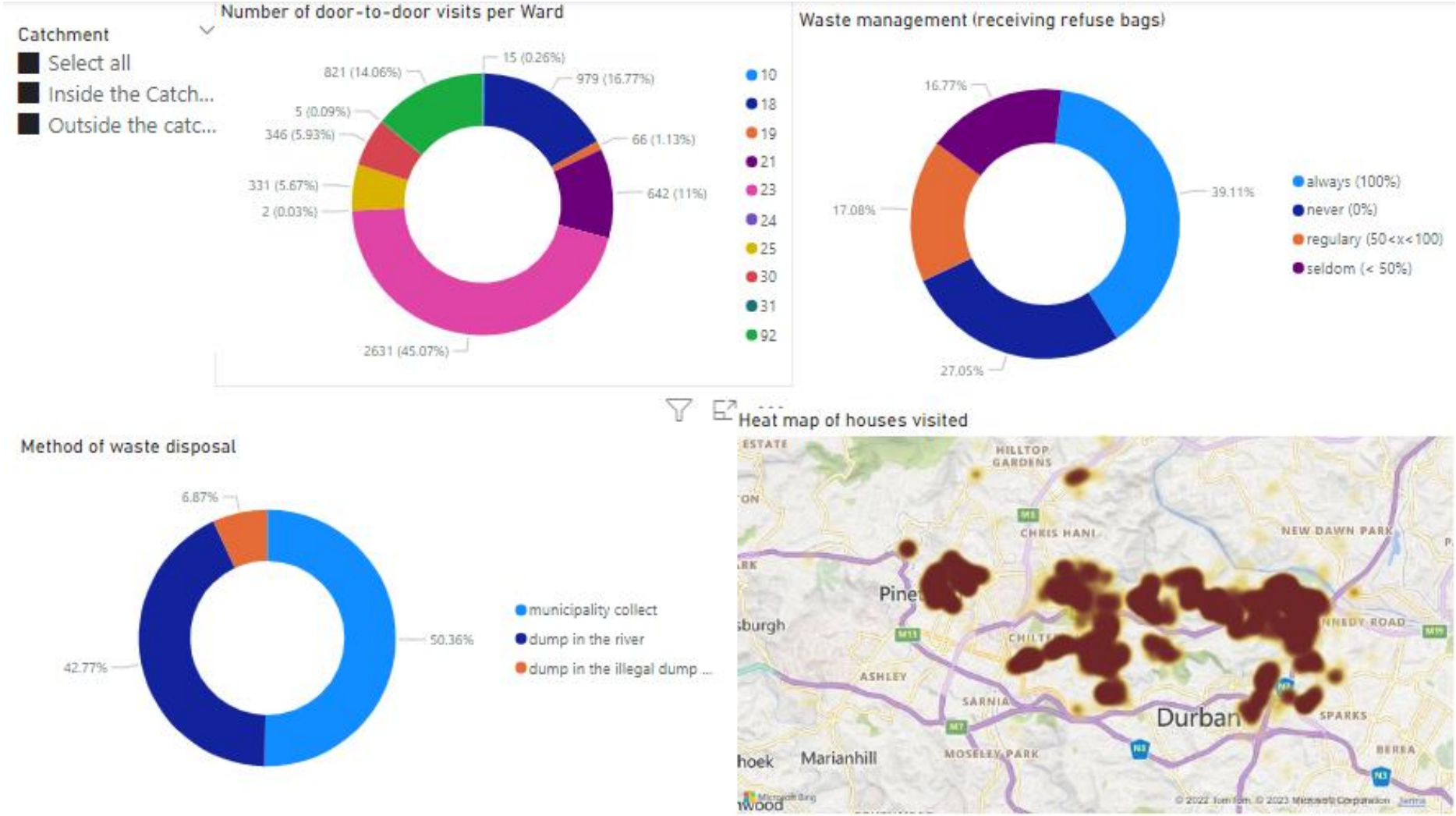


Figure 4-5 Dashboard summary of door-to-door engagements within the Palmiet Catchment

The findings of the data are summarised as follows:

- Ward 23 has the greatest number of households visited, while Ward 19 has the least number of households visited. This is the result of the catchment containing 56% of Ward 23's total land area, while only 2% of Ward 19's land area is present within the catchment area. Also, more Enviro-Champs working in Ward 23.
- Approximately 3900 pamphlets were distributed. In cases where the door was not answered, pamphlets were dropped in post-boxes instead.
- Nearly 30 % of the households that were visited never received the refuse bags, and approximately 40% always received the refuse bags.
- The vast majority of households visited were in the Clare Hills suburb in the lower catchment, followed by Reservoir Hills suburb and Chiltern Hills suburb.
- Approximately 40% of the household visited dump their waste in the Palmiet River.

Meetings and Engagements

The Enviro-Champs have worked closely with following entities:

- RP Moodley school
- Othandweni Creche and Pre-school
- Litter Boom
- Durban Green Corridor
- Coptrust
- Durban Solid Waste
- uMqhele High School
- University of KwaZulu Natal (UKZN)

Table 4-5 shows some of the activities undertaken by the Enviro-Champs with different organisations between February 2021 and October 2022.

Impacts of COVID-19

South Africa experienced the hard lockdown on the 26th of March 2020, since the outbreak of COVID-19 in late December 2019. The door-to-door environmental and educational engagements were affected by COVID-19, and house-to-house visits were often not possible due to strict regulations.

Providing pamphlets and door-to-door education (undertaken outdoors) proved to be very effective in reaching the wider community during COVID-19. The pamphlets are a useful reminder of what everyone can contribute toward the Palmiet Rehabilitation Project. The pamphlets could be left under the door or in the post-box if no-one is present in the household and to maintain the COVID-19 regulations.

Table 4-5 Activities undertaken by Enviro-Champs with various organisations

<table>
<tr><th colspan="2">Enviro-Champs Engaging Wider Community</th></tr>
<tr><td>Name of the orgainsation: UKZN
Working with UKZN student on the monitoring Enviro-Champs, UKZN students and Netherland visitors investigating local issues.</td><td>Name of the orgainsation: Mqhele High School
Working with Mqhele High School to clear invasive alien plants.</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td colspan="2">Name of the orgainsation: Durban Cleansing and Solid Waste (CSW)
Venue: Cartwood Road
Clearing of illegal dumps sites with support from eThekwini CSW took place at Morewood Road and between Clare and Quarry Road. Clean up activities were preceded by a brief talk on the importance of clearing waste (and the City’s jurisdiction/mandate) and the impact on rivers. A total of 184 rubbish bags (42 recycled) were collected at these two locations.</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td colspan="2">Name of the orgainsation: Durban Cleansing and Solid Waste (CSW)
Venue: Clermont
Clearing of illegal dump sites organised by eThekwini CSW took place at Clermont area. Clean-up activities were preceded by a brief talk on the importance of clearing waste (and the City’s jurisdiction/mandate) and the impact on rivers. A total of 250 rubbish bags were collected.</td></tr>
<tr><td>  </td><td>  </td></tr>
</table>

Name of the Organisation: Coptrust
Venue: 29 street 1972 Clermont Ndunduma 3610
Coptrust is an organisation that runs several feeding scheme programs for children and old people. The organisation also offeres life skills training programme. Enviro-Champs conducted a session about what it means to be the Enviro-Champs and what the Enviro-Champs activities are within the community.


In the early stages of the project, engagements with various organisations were affected by COVID-19, and school visits were often not possible due to strict regulations. When regulations eased, the Enviro-Champs conducted visits to different organisations. During these visits, members representing their organisations learnt how to measure water clarity (turbidity) with the Clarity Tube, how to be a junior Enviro-Champ, and how to use and make an environmental education poster.

The War Room / community meetings were severely impacted by COVID-19. Due to the COVID-19 restrictions, the Enviro-Champs were only able to attend one public meeting, namely, the Integrated Development Plan (IDP) Annual Report West Central Region public meeting in Ward 92 on the 22nd of April 2021 (Table 4-6).

Table 4-6 Enviro-Champs attending the IDP public meeting

Public Meeting
eThekwini Municipality 2019/2020 Annually Report West Central Region in Ward 92


5. SOCIAL IMPACT OF THE ENVIRO-CHAMP PROGRAMME

The Palmiet Enviro-Champs are members of the Palmiet Catchment Flood Early Warning System (FEWS). The FEWS is a system administered by the eThekwini Municipality by which flood risk to communities can be prevented or minimized.

On the afternoon of the 11th of April 2022, the Enviro-Champs received a notification from the WhatsApp Palmiet River Watch Flood Alert group, giving the warning about the upcoming heavy rains and floodings. As a trusted social fabric living among the community, the Enviro-Champs were instrumental in urgently spreading the information by forwarding the message to other WhatsApp groups and phoning community members, leading to effective evacuation of the Quarry Road West Informal settlement. Many lives were saved.

Before the flooding and during the flooding the Enviro-Champs, led by eThekwini Municipal officials and staff of the University of KwaZulu-Natal, walked along the riverbanks and through the settlement urging the residents to evacuate their dwellings. They continued helping the community members by moving their personal belongings, including furniture, away from the river. After the floods, the Enviro-Champs continued helping community members to clean, repair damages and rebuild their homes. The Enviro-Champs themselves were greatly affected and also experienced major losses. The Enviro-Champs were also able to source donations of food, clothing, furniture, and household appliances from a wide area due to networking and connections.

On Friday 29th April 2022, the Minister of the Department of Forestry Fisheries and the Environment Ms Barbara Creecy, accompanied by MEC Ravi Pillay, visited the Quarry Road West Informal Settlement and the Palmiet Nature Reserve. The purpose of the visit was to hear directly from community residents about the impacts of the severe flooding that occurred on the night of the 11th of April, and to hear about solutions being implemented within the Palmiet Catchment Rehabilitation Project (PCRP). At the meeting at the Palmiet Nature Reserve, Sean O'Donoghue provided a presentation on various aspects of the PCRP/IIPSA project as well as the Transformative River Management Programme, among other things. Importantly, three of the Enviro-Champs residing in the Quarry Road settlement were given the platform to speak, and they ceased the opportunity and spoke boldly:

- Thembisa Nomlala spoke as a community member about her trauma.
- Luyanda Xolo spoke as an Enviro-Champ and explained the role of the Enviro-Champs in the community.
- Zandile Ntuli spoke about the project and hoping that the project will be extended.

This meeting was incredibly important for the Enviro-Champs, which gave them a greater sense of purpose and value in their work as Enviro-Champs.

6. LESSONS LEARNT

At the end of 2021, a Learning Workshop was held with the Palmiet Enviro-Champs at the Palmiet Nature Reserve Hall. The purpose of the workshop was to discuss highlights, challenges and lessons learnt from the Palmiet Enviro Champs Programme during 2021. All aspects of the Enviro-Champs activities were covered, including door-to-door engagement, fixing water leaks, illegal dumping, training days and accredited training, community organisation visits, meetings, using the GeoODK App, industrial monitoring, social media, and reporting. The Enviro-Champs listed the following lesson learnt:

- Support your team: Delegate tasks appropriately and enforce ...
- Communicate clearly: Check in often with the team and keep communication lines open.
- A powerful commitment to the common-good.
- Learning is key.
- Coping in the new-normal world of COVID 19.
- Indigenous knowledge practices and mobilising prior knowledge.
- Let team know when they have done something well.
- Civil society partnerships with government.

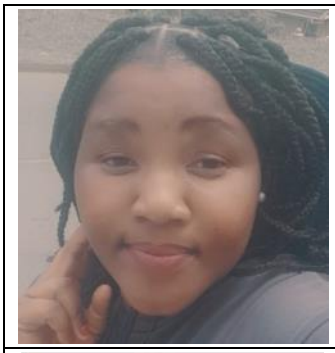
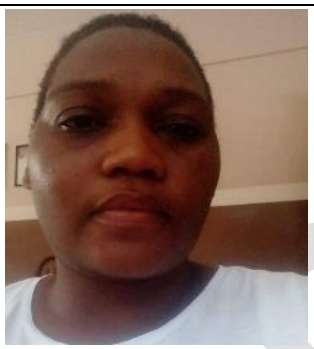
A second and final Learning Workshop was held with the Palmiet Enviro-Champs in December 2022. Similarly, challenges and lesson learnt were discussed and recorded. The transcript of this meeting is still being developed and will be provided in the next quarterly report.

7. CHANGING LIVES

The Enviro-Champs were asked how the programme has changed or impacted their lives. The feedback from a few of the team members is captured below.

Feedback from Palmiet Enviro-Champs in their own words

	**Thembisa Nomlala** "The project changed my life. I have new educational certificates. I felt blessed when I received the certificates on 9 December 2023 (That was a big day for me). I have learned a lot now I am sharing what I learned with my family and community."

	**Nomandla Nqanula** "I learned about the natural environment. I stopped polluting the river after I have about the importance of nature. I also learned to speak in front of a bigger audience and speak about issues we are facing as community members. Now I get worried when I see a water leak. I also report water leaks. I attended so many training courses and that has helped me to improve my thinking skills. People believe that plumbing and grass cutting is only for men. I have learned to listen to others and be patient with others when working together. The project helped us to start our own company."
	**Zandile Ntuli** "The project changed my life a lot especially when it comes to knowledge, i learned a lot about environmental issues we are facing as Quarry Road community, and I have improved my education through achieving more educational certificate. I had a chance to meet very important people like MEC of environment."
	**Ntombizethu Ngcobo** "The project changed my life because I managed to support my family financially. I learned a lot on training."
	**Nomfundo Shabalala** "The project changed my life a lot because I only had matric certificate. The project gave me an opportunity to study further and achieve more certificates. I also managed to financial support my family".
	**Mbuyiseli Jombile** "The project has changed my life positively and productively. I learned and I achieved a lot during the project. I learned a lot about the relationship between nature and people. I am now sensitive whenever I see the environment being polluted or mismanaged. Thank you GroundTruth for the practical experience I gained. I will apply my experience in future."

8. SUSTAINABILITY

8.1 Issue detection through GeoODK and the PowerBi Dashboard

The Enviro-Champs captured in-field data using the GeoODK App which was then collated and transferred to eThekwini Municipality in a dashboard format created by GroundTruth using the application called PowerBi. The dashboard is an interactive tool that can be tailored to display the most important data, giving a more accurate and comprehensive picture of the problem areas in the Palmiet Catchment. The graphical outputs of PowerBi are utilised in this report (See Achievement section).

The dashboard was created in order to present data in one place and to assist the Municipality to make informed decisions, and to save time and use of resources. Both field staff and managers to identify the exact locations of environmental issues and to deploy the necessary teams or inspectors to the area of concern.

These software applications highlight the value of having in-field teams actively monitoring existing issues, and detecting and recording new issues, to reduce response time from the City and thus reduce environmental risks.

8.2 Partnership based River Management

The Palmiet IIPSA EI project and the associated Enviro-Champs programme have demonstrated how a relationship between communities and the City around a common environmental asset, such as the Palmiet River can be enormously beneficial to both entities, and penultimately the natural environment (whilst the demise of the environment evidently detrimental for both entities). This dovetails with the Transformative Riverine Management Programme (TRMP) currently being developed by the City, which seeks to develop partnerships within various catchments for improved riverine management, particularly in light adaptations to climate change. Community based management is a key aspect of the TRMP. As such the Palmiet IIPSA EI project demonstrated the valuable role of community members, such as the Enviro-Champs, as well as other community groups, in contributing to environmental issues monitoring, waste reduction, clearing of alien plants, environmental education, and others. In addition, the Palmiet IIPSA EI project has helped to identify key stakeholders, pulling together various initiatives and implementers, and also contributing the value-add and lessons learnt from the Enviro-Champ programme among others. Within the Palmiet Catchment, many stakeholders are in firm support of concerted riverine management and are eager to implement the necessary interventions should funding become available.

Importantly, the publicity around the Palmiet IIPSA EI project and the Enviro-Champs model has attracted attention from private entities and is gaining momentum in terms of prospective projects to employ the existing Enviro-Champs for additional riverine management work (‘river stewardship’ on behalf large corporates), but also to expand the concept and the reach of Enviro-Champs into additional areas of the municipality. Both these avenues are very promising and are a testimony to using this type of working model for improving river health.

The Palmiet Enviro-Champ programme also featured in a short film produced by the DBSA/SANBI (See below). The contribution and value of Enviro-Champs was highlighted, as well as the plight of two of the champs following the damage caused by the April flood event, elevating the need for developing catchment partnerships, building resilient communities and preserving ecological infrastructure for climate change adaptation.

8.3 Mainstreaming Biodiversity

The DBSA in collaboration with SANBI and eThekwini Municipality, commissioned the production of a short film on mainstreaming biodiversity into infrastructure investments (for water security) to ensure positive environmental and social impact and to build resilience of landscapes for water security. The film was prepared for the Climate and Biodiversity Conference of the Parties (COP) held in October and December 2022, respectively, and covered two projects in the Umgeni Catchment, one of which was the Palmiet IIPSA EI project as part of the IIPSA funding agreement.

Several members of the Palmiet IIPSA EI project team and advisory group provided input to the video material in the form of key messages explaining why biodiversity is essential for water security and how important it is to invest in biodiversity as a supplement and complement to engineering infrastructure. The work of the Palmiet Enviro-Champs was also included in the film. The nature of this work embraces the principle behind a Just Transition, that is, securing the future and livelihoods of workers and their communities in the transition to a low-carbon economy and environmental sustainability.

8.4 Establishment of Co-operatives

An important objective of the Palmiet IIPSA EI project was capacity building, empowering and upskilling members of the community toward sustaining better livelihoods and increasing their employability beyond the lifespan of the project. During the Enviro-Champ programme, members of the team expressed a keen interest in establishing several small-medium micro-enterprises (SMMEs). Two co-operatives have been established to date, whilst a third in is progress. Two of these were funded through the SANBI Palmiet Support Project, whilst the third was established independent of the project.

It is encouraging to see the Enviro-Champs taking the next steps to utilise the knowledge and skills they have gained, to create their own businesses and walk into a plan for a better future.