OPEN ACCESS Freely available online

IJSSAI International Journal of Social Sciences and Artistic Innovations

ISSN 2737-5293
Volume 6
Issue2
International Journal of Social Sciences and Artistic Innovations

Article

The Effects of Water Tanker Mafias and Illegal Connections in South Africa as a Water Scarce Country

Tumiso Mokhomole

Forensic Investigations Directorate, Department of Agriculture, Land Reform and Rural Development, Pretoria 0001, South Africa; mokhomole.td@gmail.com; Tel.: +27-73-802-7518

Received: Apr 15, 2025; **Revised:** May 15, 2025; **Accepted:** May 16, 2025; **Published:** Jun 30, 2026

Abstract: This paper seeks to investigate the effects of water tanker mafias as well as illegal connections in South Africa as a water scarce country. Where there are no opportunities, water takers mafias damage key water infrastructure to derail the main supply while contracted by municipalities on emergency basis to render water as a basic necessities, which further becomes difficult for the law enforcement to investigate and make arrests due to the operational complexity of this criminal syndicate. The researcher adopted a descriptive and qualitative research approach to collect data detailing the effects of water tanker mafias and illegal connections in South Africa as a water scarce country. Data was selected purposively, contextual and thematically analysed mostly from secondary sources and to some extent from primary sources through observation. It was found that water mafias tamper with water infrastructure in order to disrupt water supply so that they can be contracted by municipalities to deliver water to the communities through water tankers. As things stand, the executive and its functionaries only talks tough on illegal connections and water tanker mafias which contribute significantly on Non-Revenue Water (NRW) with no actions to effect their talks, thus, resulting in South Africa continuing to experience water supply issues similar to the electricity crisis. The problem of water crisis has been diagnosed by experts, engineers and researchers, but with no follow up action by the government.

Keywords: Water tanker mafias, Infrastructure, Illegal connections, Water crisis, Projects, Leaks

1. Introduction

Section 27(1)(b) of the 1996 Constitution of the Republic of South Africa Act, 108 of 1998 as amended stipulates that every citizen has the right to access sufficient food and water. This section is enacted under Chapter 2 of the Bill of Rights which describe water as basic human rights. Water was further declared by the United Nations General Assembly as a basic human right whereby everyone has “the right to safe and clean drinking water and sanitation as a human right that is essential for the full enjoyment of life and all human rights” (United Nations Human Rights, 2010). Notwithstanding that water is described in the Constitution of the Republic of South Africa as basic human right’s needs, meaning each household is entitled for 6,000 litres of water per month as free basic allowance from the government (Carnie, 2024). Nonetheless, there are millions of citizens in South Africa who do not enjoy this allowance including not having access to water at all. Those who afford it have resorted to the drilling of boreholes as an alternative access to water while the water crisis persists in South Africa. According to Libera (2025), water tanker mafias was highlighted in a preliminary report as another growing crisis in South Africa. The report which was presented to the Parliament Portfolio Committee on Police, “paints a grim picture” of this organised crime syndicate that is damaging to the water infrastructures that are in shambles including that South Africa is already a water scarce country. Though it is difficult to crack down this sophisticated criminal syndicate, their operations cannot be ruled out without collusion between water tanker mafias and municipal officials. Libera (2025) further flagged corruption as a key driver to the rebellion of water tanker mafia networks in South Africa.

The water tanker mafias also deploys similar tactics employed by the construction mafia in that they extort municipal contracts through intimidation and threat to violence against municipal officials who stand in their way. The preliminary report highlights a ticking time bomb moment which requires urgent intervention by state and authorities to manage it while it is still manageable and under control, not ruling out that it is nearing a stage where it could potentially become unmanageable or uncontrollable if not addressed soon. The South African government has acknowledged the insurgency of water mafias which is sophisticated in nature and difficult for the police to investigate as the syndicate often pretends to be real business forums. At present, the South African government is struggling with water supply to many communities due to amongst other things illegal connections, water leaks, aging infrastructure and climate change. As temporary measures to the water crisis in South Africa, municipalities source the

services of water tankers to render this basic need to the affected communities. The main problem is that water tanker mafias capitalise and thrive through poor maintenance of municipal aging infrastructure, lack of technology, and land grabs which lead to illegal connections that continue to grow unabated by law enforcement agencies. Consequently, lack of investments in water infrastructure by the government, poor maintenance, illegal connections and actions of water taker mafias threaten the livelihood of vulnerable communities who cannot afford to buy water as a basic necessity.

2. Materials and Methods

Research design is described as the method that is carefully chosen and/ or adopted by the researcher into the study to help in addressing research problem through research objectives, questions and purpose derived from the research topic (Leavy, 2022:8-9). Qualitative research is normally described from inductive approaches or reasoning which began from the specific observations of the study phenomena or data collected, analysed, and presented with the purpose to reveal hidden themes and develop new concepts to draw a logical conclusion. It was deemed necessary by the researcher to employ both qualitative and descriptive research approaches to highlight the effects of water tanker mafias as well as illegal connections in South Africa as a water scarce country and to the already distressed economy. This is because these two research approaches are often used interchangeable by researchers.

Qualitative research was followed to thoroughly examine and reveal underlying realities in relation to the effects of water tanker mafias as well as illegal connections in South Africa as a water scarce country (Austin & Sutton, 2014:438; Tenny, Brannan & Brannan, 2022). The application of qualitative research relies mostly on secondary sources such as published articles, journals, reports and media statements by South African government and parliament including reports and articles published by media houses, and primary source through observation coupled with researcher's lived-experience.

Ajayi (2023:2) defines primary data as information gathered by the researcher for specific purposes while secondary sources is defined as data gathered by the researcher from other published sources. Most of the data into the study was presented from secondary sources. The collection of qualitative data was done through the review of various reports, statements, articles, journals and researcher's observation of water crisis in metropolitan municipalities such as Johannesburg, eThekwini, Tshwane, and Nelson Mandela Bay (Gqeberha) including frequent observations of daily media reports regarding water shortages and accessibility thereof across South Africa (Austin & Sutton, 2014:438).

Although most of the data was collected from secondary sources of data as stated above; however, some of the contextualised data stemming from the researcher's frequent observation of continuous water shortages due to leakages often caused by aging infrastructure, illegal connections, tampering, vandalism and sabotage of water supply system in most parts of the areas within cities like Johannesburg, eThekwini, Tshwane, and Nelson Mandela Bay (Gqeberha) while being delivered through water tankers as temporary relief measure to caution residents. The contextualised data was presented to support the literature review presented from secondary sources.

For analysis, description and interpretation of the collected data, the researcher grouped qualitative content analysis and thematic analysis together as they are both part of descriptive qualitative research. This is because qualitative content analysis and thematic analysis are both sets of qualitative techniques used to analyse textual data, explain and/ or interpret themes.

Moreover, qualitative content analysis and thematic analysis have similarities in that the researcher employed both of them to analyse, describe and interpret textual data in relation to the consequence of water tanker mafias as well as illegal connections in South Africa as a water scarce country including considering context data in search for themes (Vaismoradi, Jones, Turunen & Snelgrove, 2016:100-101).

By employing these two analyses, the researcher was able to thoroughly interrogate and analyse textual data from published reports, statements, articles and journals which were cited and referenced; and researcher's frequent observation coupled with lived-experience. The presented data was not measured on statistics and numbers, rather relied on documented statistics that pointed out the NRW losses across the eight (8) metropolitan municipalities and provinces with the exclusion of Western Cape.

More important, Vaismoradi et al. (2016:100-101) demonstrate that both qualitative content and thematic analysis are design to code, investigate the meanings and provide thorough explanation regarding, in the case of this study; the effects of water tanker mafias and illegal connections in South Africa water crisis from the created themes. The study further focuses on gaining understanding of why municipalities record so many NRW losses and the reasons behind water crisis in South Africa as a scarce country including its impact on businesses, economy and social lives of the public (Sutton & Austin, 2015).

The researcher followed an inductive coding approach to develop themes based on the collected secondary data and researcher's observation of water crisis in South Africa and the cause thereof. Through the analyses of data in relation to the causes of the water crises in South Africa, the researcher was able to draw patterns from the collected data and formulate the presented themes. Formulated themes were used to narrate the effects of water tanker mafias as well as illegal connections in South Africa and its economy as a water scarce country as well as failure by the government to invest on water infrastructure. The presented data

was allowed to speak for itself from the formulated themes while the researcher was creating new concepts and understandings (Bingham & Witkowsky, 2022). Six themes were formulated and discussed below under the title: Presentation of Themes, Review of literature and Discussion.

To validate the data, the researcher ensured that the findings of the study from the collected data are clearly connected with the researcher topic and purpose. The reliability of the data was guaranteed by the researcher when analysing and interpreting data that was collected, understanding the meanings through the examination of variables, where the concealed insights and patterns were uncovered and presented in this study (Coleman, 2022). In addition, both reliability and validity were employed to guarantee the trustworthiness of the study results. The researcher demonstrated from the data collected to ensure that it addresses the research topic, question, objectives and purpose.

3. Presentation of Themes, Review of Literature and Discussion

Themes, literature reviewed and discussion of study results are presented in this section.

3.1. A Brief Historical Overview of Water in South Africa

The growing population and urbanisation in South Africa is not aligned to the preservation and supply of water by the responsible entities and municipalities. The challenge to water preservation and supply by municipalities and responsible entities is further coupled by other uncontrollable factors such as minimal rainfall and higher water consumption by households. This was confirmed by Simelane (2025) who indicated in Tshwane, water supply issues are no longer sustainable as its consumption had already exceeded licence requirements, thus forcing the metropolitan municipality to implement Level 1 water restrictions as contingency measures to avert system collapse. The researcher observed that the main cause of water challenges in South Africa are poor planning, lack of maintenance to the existing infrastructure, water leaks and illegal connections by some of the communities which further exacerbate the problem.

South Africa is reported to have received 450 millimetres (mm) annual precipitation contrary to the 860 mm annual average precipitation internationally. On top of the country receiving less annual precipitation, is the estimated consumption of 237 litres of water per day by an individual in South Africa which is above the require or an average of 173 litres per day as a set, preferred and/ or practice standard across the globe (Mnisi, S.a. & Department of Water and Sanitation, 2023).

Globally, South Africa is ranked amongst the top 30 driest and water scarce countries. To manage the water scarcity, municipalities, Water Boards, Department of Water and Sanitation continue to urge residents/ citizens to preserve water and use water sparingly. According to 2023 full Blue Drop Report released by Department of Water and Sanitation (2023) indicates that South Africa water losses have risen from 37% in 2014 to a staggering 47% (almost half century in terms of percentages of treated, clean, drinkable and deliverable to the customers) in 2023. The water losses are due to illegal connections, leaks, malfunctioning of water meter readings, not accounted for and/ or not reaching the customers or designated area after being treated and distributed by Water Boards.

This was further confirmed by Carnie (2024) that more than 47% of water in South Africa is lost from the systems due to water leaks, aging infrastructure and lack of maintenance thereof and illegal connections. Of the more than 47.4% water losses, 40.8% losses are attributed to water pipes leaks or leakages. This demonstrates almost 50% of water in South Africa is lost in South Africa without reaching the households or users. This is a disaster if not a crisis as the country may be heading towards day zero similarly to the previous experience of electricity blackouts. Recently, the global average of NRW due to leaks, illegal connections, etc. is sitting at 30%.

In terms of the data published by the Department of Water and Sanitation in relation to NRW losses per province, Carnie (2024) paints a bleak picture (a worrying situation) across eight provinces as Figure 1:

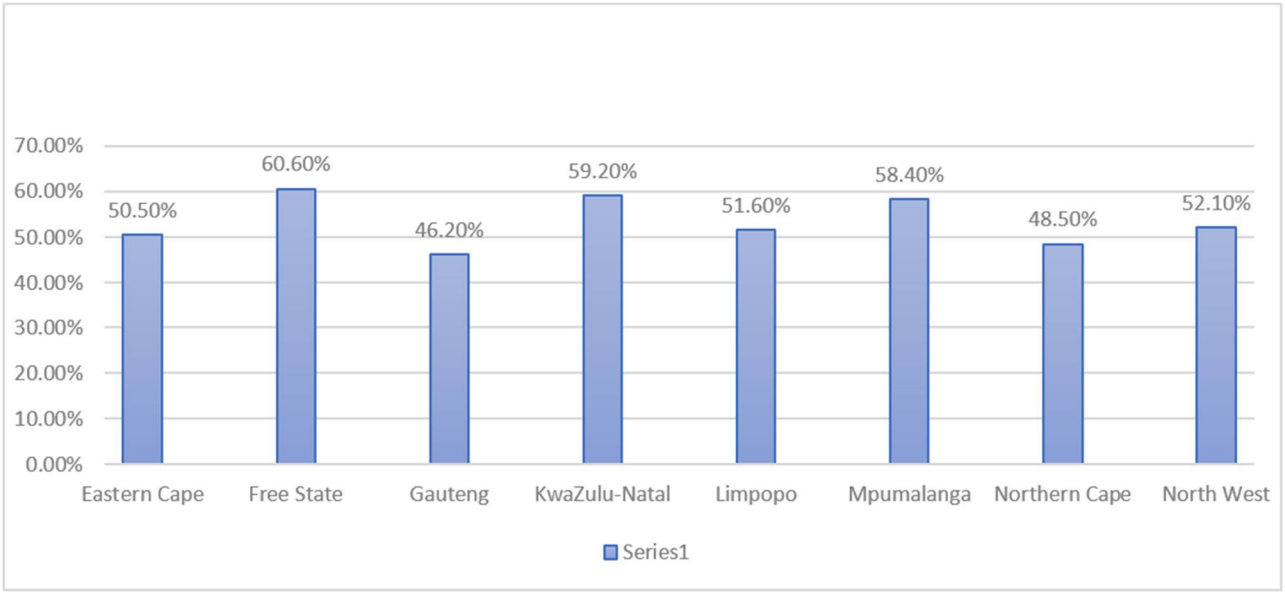

Fig. 1. Recorded Non-Revenue Water Losses (%) per Province in South Africa at the end of 2023.

The data presented above the chart indeed paints a dire situation taking into account that South Africa is a water scarce country. This was in fact supposed to be a perfect time for the government to wrap up maintenance of aging and existing water infrastructure to preserve every single drop of water from the water reticulation process so that water is delivered efficiently from the sources to the customers. With the exception of Western Cape province, Carnie (2024) points out that the NRW losses across the eight (8) provinces is sitting at between 46% and 51%, which is not acceptable.

As part of intervention to water scarcity and challenges in South Africa, the Lesotho Highlands Water Project (LHWP) was established in 1986. According to the African Development Bank (2021:16), this was a joint initiative between the Lesotho government represented by Lesotho Highlands Development Authority (LHDA) and South Africa government represented by Trans-Caledon Tunnel Authority (TCTA) as two implementing agents on behalf of two governments to construct dams in Lesotho and transfer water to South Africa through Vaal River System (VRS).

The LHWP is a 'multi-phased project' of which Phase 1 was completed in 2003 and commissioned in 2004, it transfers 780 cubic meters (m^3) of water annually into Vaal while Phase 2 of the project is currently underway with the aim to transfer 490 cubic meters of water when it's completed by 2028 (Asaram, 2022). This will lead to a total of 1270 cubic meters (m^3) of water to be transferred into South Africa when Phase 2 is completed by 2028.

At present, there are a quiet number of water projects committed by the government that are underway across South Africa. Infrastructurenews (2025) reveal amongst other water projects the Upper uMkhomazi Dam for an amount of R26 billion in KwaZulu-Natal province, Ntabelanga Dam for R8 billion total amount budgeted for in Eastern Cape, the R4 billion N'wamitwa Dam in Limpopo while other projects includes the construction of bulk pipelines, refurbishment of existing water infrastructure, expansion of dams walls to increase water supply for domestic, industrial and irrigation use, etc.

3.2. The Extent of Water Crisis in South Africa

For the past decade, South Africa has been warned about the water crisis by various institutions such as the Development Bank of South Africa (DBSA), Helen Suzman Foundation (HSF), etc. The analogy of these institutions derived from the fact that South African is pronounced as water scarce country cause by amongst other things a climate change, higher demand of water due to the increasing population and higher water usage cause by the lack of knowledge in relation to the water usage and/ or preservation thereof by some community members.

However, Creamer Media Reporter (2023) expresses that despite that South Africa is known to be a water scarce country, the provision of water by its storage and distributing sector is under siege from the thriving notorious criminal syndicates known as water or tanker mafias, which operates parallel to that of construction mafias. Despite its parallel operations, they apply similar tactics deployed by the construction mafias whereby they sabotage water infrastructure in order to get contracts to deliver this precious resource through water tankers for their own profit. The water or tanker mafias capitalise on state failure to crack down this organised crime criminal syndicate including state failure to safeguard water through maintenance of water infrastructure and

utilisation of technology to detect leaks. As a result, when taps run dry, the government is forced to rely on these water tanker mafias by sourcing their services in the eve of water supply shortages.

In the City of Johannesburg, the Daily Investor (2025) reported that out of the 80 water reservoirs registered under the city's assets, only 38 water reservoirs are functional, of which 11 from the 38 functional reservoirs were being repaired recently. While the remaining 42 water reservoirs are leaking which outline how deep the water crisis is in the city. It was further revealed that the city has "2,396 burst pipes, 6,727 leaking meters, 442 leaking valves, and 259 leaking fire hydrants." Indeed, the city requires urgent intervention or perhaps declares the situation in the city as disastrous.

From the quoted assertion above, the researcher can now confirm that the water shortages in South Africa is a major crisis if not heading towards a disastrous moment. This is because in most instances, the researcher observed that the ongoing water shortages are primarily caused by frequent pipes burst; meters, valves and fire hydrants leakages and tampering thereof; illegal connections; poor maintenance of water supply systems and aging water infrastructure.

However, Stoll (2024) argues that South Africa is projected to have been losing nearly 70 million litres of clean and drinkable water on a daily basis which is being treated by water boards and responsible municipalities due to aging infrastructure, leaks, poor maintenance and lack of government investments on water infrastructure. In the City of Tshwane (CoT), Simelane (2025) indicated that poor management of one of the city's critical infrastructure to economic growth resulted with the CoT losing one-third of the acquired water from various water boards.

This is despite the fact that South Africa is ranked number 29 driest (water scarce) country out of 193 countries across the globe. A Water Crisis Committee was established to assist the government to respond to water leaks across South Africa. Since its establishment in June 2022, Stoll (2024) reported that the Water Crisis Committee through its emergency response team, managed to fix more than 9,700 water leaks within the country.

From the eight (8) South African metropolitan municipalities, Carnie (2024) reported water losses due leaks, illegal connections, ageing water infrastructure, broken/ malfunctioning of water meter readings, not accounted for and/ or not reaching the customers or designated area after being treated, cleaned and distributed by water boards to municipalities or customers as follows Figure 2:

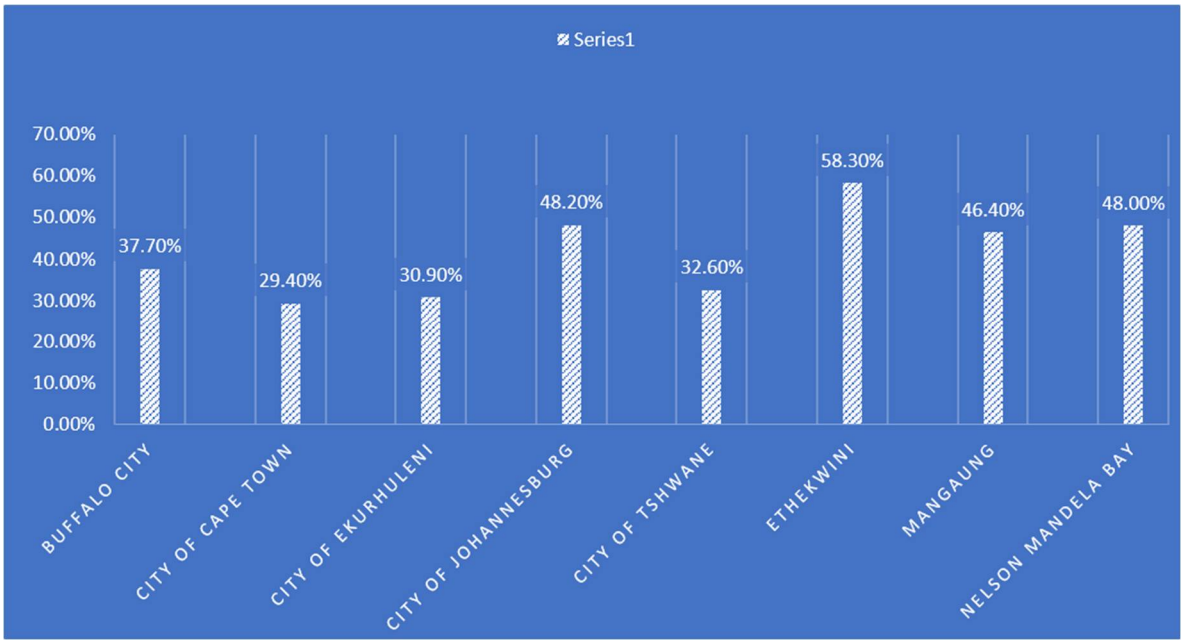

Fig.2. Recorded Non-Revenue Water Losses (%) from 8 South African Metropolitian Municipalities.

The data presented above shows that the situation in eThekwini, Johannesburg, Nelson Mandela Bay, Mangaung and Buffalo City is dire and requires urgent intervention. It has already become a norm in these cities for residents to be subjected to water tankers week in and week out while the water infrastructure to store and supply water continues to deteriorate due to negligence, lack of maintenance and investments by responsible metropolitan municipalities and water boards. The City of Cape Town which was subjected to day zero almost a decade ago seems to be doing better in managing water leaks and illegal connections as its percentage is below 30% of the required global average.

In characterising how dire the water crisis situation is in South Africa, Stoll (2024) highlights that despite water infrastructure investments deficiencies by government and climate change which lead to minimal rainfall, South Africa continues to lose a considerable amount of water due to water leaks caused by aging and ailing infrastructure. This was confirmed by Luvuyo Bangazi (a spokesperson for the government committee responsible for water crisis in South Africa) as cited by Bartlett (2022) who indicated that South Africa "haven't had good rains for more than seven years and country had a sharp increase in water consumption from across sectors, be it residential, business, or other. So, compounding that with obviously ailing infrastructure that leads to severe water leaks … almost 25-30% of South African water [is] being lost due to water leaks caused by failing infrastructure."

From the presented evidence above and despite that South Africa is described as a water scarce country, both the government and citizens exacerbate this crisis by failing to protect this precious natural resource. A listening government could have invested in water infrastructure to preserve it even during the worsening climate change. The executive and its functionaries have failed to act on this emerging problem until it becomes a crisis, which led them to react now in an attempt to salvage this deepening crisis, forgetting that it might, perhaps, be too late because of the required amount of investments or money.

Based on researcher's observation, the water takers mafia's problem could have been avoided if the government, municipalities and water boards had invested more on water infrastructure, maintenance, technology and security of the infrastructure. The researcher holds a view that the crisis was created by the South African government which failed to invest on water infrastructure, build water capacity, maintain or take care of the existing water infrastructure. In the mix of the water crisis in South Africa, is the delay in completion of Phase 2 LHWP aimed to address water challenges in Gauteng province and surrounding areas. Phase 2 of LHWP has been riddled with allegations of corruption which resulted in completion target date of 2018 now being moved to 2028, delayed by a decade.

3.3. The Impact of Water Tanker Mafias to the Economy of South Africa

The criminality associated with water tanker mafias is now becoming a contentious issue in South Africa, to the extent that the President admitted during the National Water and Sanitation Indaba held from 27 – 28 March 2025 that water tanker mafias leave many communities and businesses helpless when they vandalised water infrastructure to score municipal tenders to supply water on emergency basis. Jacobs (2025) emphasises that water tanker mafias are deeply rooted within the municipalities across the country, thus becoming difficult for the state and/ or authorities to crack them down as the criminal syndicate capitalises ongoing water crises to score contracts or tenders.

As water is regarded as the main basic needs and key to the economy growth and development, its crisis was cited as one of the factors to derail investments into the South African economy. According to Jacobs (2023), water shortages are one of the few potential risk factors that signify a resistance from the private sector to no longer be interested in investing into the South African economy. This is because the private sector believes that water shortages or crises will outweigh their expected returns if they invest into the economy. To collaborate the assertions above, the researcher agrees that any infrastructure development including functional industry will require a stable water supply to survive and produce results.

The dependence of the economy on effective water supply was also confirmed by the President Cyril Ramaphosa during the State of the Nation Address (SONA) presented on 06 February 2025. The President indicated that while it is impossible for households or ordinary citizens and businesses to survive without water, it will also become impossible for the South African economy to grow without an effective water supply.

President assertion was confirmed on a number of occasions by Jacobs (2025) who warned that the instability of water supply may lead to social unrest. Jacobs further drawn his assertion from the Presidents' views uttered during the National Water and Sanitation Indaba that vandalism of water infrastructure, taps that keep running dry, lack of maintenance and continuous leakages at municipal or local government level may lead to sporadic protest across the country if the situation (ongoing water crisis) does not improve. To sum it up, the importance of effective water supply is key towards social and economic stability as its availability supports social services, industries or business and agriculture, thus, the mismanagement of this precious resource and its persistent shortages might lead to social unrest, economic hardship, disagreements and/ or perhaps clashes.

Two years' ago, experts also warned the South African government about the catastrophic water supply shortages in Gauteng province to the economy and job security. This is because the stability of the economy and social stability depends on an effective supply of treated, clean and drinkable water and sanitation since water is classified as the foundation of the national economy. The interconnectivity of social and economic stability was also confirmed by Professor Anthony Turton, a water scientist as cited by Jacobs (2025) that "of course, when water supply is disrupted, businesses cannot operate. It means that there will also be an impact on the workforce." Over and beyond, citizens must acknowledge and "appreciate that water is the foundation of your national economy" as it is "the foundation of social stability."

The researcher shares the analogy that water supply shortages cause massive disruption to day to day life of ordinary citizens, businesses, government operations and economic activities in South Africa. Perhaps, the government must declare a state of disaster on sporadic water shortages across the country in order to address the ever deepening crisis, as more focus would now be shifted to water challenges similarly to what happened to the electricity crisis which has since now been partially stabilised.

Access to water by households, businesses, industries, manufacturing companies and ordinary customers as a basic need to unlock economic activities as always people will argue that 'water is life.' Consequently, the acts of criminality by water tanker mafias syndicate does not only threaten the livelihoods of households and production of businesses, industries, manufacturing companies, etc.; it also threatens the delivery of key essential services such as health, security including crippling the economic growth (Bhuda, 2025). In addition, the ongoing public trust on government to render basic services becomes eroded as it frequency observed by the researcher in the cities such as Johannesburg, eThekwini, Tshwane, Nelson Mandela Bay (Gqeberha).

As it stands, the data that was collected and presented into the study suggest that the authorities and government operates on an idly mode while the water tanker mafia syndicates cause great damage, destruction and chaos to water utilities by tampering with water infrastructure network and illegal connect water from the network, resulted in interruption of water supply to relevant customers. As the activities of water tanker mafias are directly linked to extensive level of lawlessness and disregard to state authority, as a consequence, the state must confront illegal connections and water tanker mafias head-on (directly) without compromising direct customers who are law abiding citizens and honour their obligations by pays their rates. The researcher believes that taking illegal connections as well as water tanker mafias head-on will suppress the ongoing lawlessness and vandalism of the already ageing water infrastructure.

Based on a researcher's perspective, organised crime in South Africa is taking its toll and leveraged on inactive crime intelligence and failure by municipal police and law enforcement agencies to suppress criminal networks such as water tankers and construction mafias that held government, businesses and households ransom for their own benefits. Despite the strong condemnation of these mafias across various sectors of society, the state has for too long allowed these criminal syndicates to settle without decisive action, and now it becomes difficult to completely eliminate these mafias without them backing down.

In an effort to curb criminality associated with construction and water tanker mafias and protect key infrastructures, the Critical Infrastructure Protection Act, 8 of 2019 (CIPA) was enacted into law by Parliament with the majority of its provision coming into effect on 30 April 2022. Despite the Act being enacted, Smit (2022) argued that the Act is not fully operational yet as the legislation will be proclaimed fully at the appropriate time in the future. Consequently, it becomes difficult (challenging) for the South African Police Service (SAPS) to enforce the incomplete legislation, hence water tanker and construction mafias continue to thrive and leveraging on poor governance and management in the government includes gaps within the CIPA.

3.4 Lack of Investments on Water Infrastructure in South Africa

The deficiency of water infrastructure investments in the country was also confirmed by the New Development Bank (2023) which indicated that almost 25% of households in South Africa do not have access to water that is conveyed through pipe lines while "16% of households do not have access to improved sanitation services."

While Jacobs (2025) argues South Africa needs to spend or invest R100 billion per year to salvage the current existing water infrastructure in order to revive the economy. Jacobs (2025) emphasise that this is a result of decades of government disinvestment on critical infrastructure which drives the economy such as roads, railway, power plants including water reservoirs, dams, treatment plants and pipes that have negatively affected the smooth supply of water and sanitation services by municipalities across the country to the households, businesses and customers.

The crumbling of water infrastructure in Johannesburg, Tshwane, Ekurhuleni, eThekwini, Nelson Mandela Bay (Gqeberha) does not just derail economic growth, thus, it further reduces business confidence (less investments) and exacerbates inflation. The researcher is in agreement with Jacobs (2025) who put the blame on the doorstep of the South African government as it disinvested in critical infrastructure such as expansion of dams, water reservoirs, treatments plants and pipes as well as the maintenance for decades and now they are crumbling including being on the verge of collapse.

Notwithstanding these facts, some of the executive leaders and its functionaries do not want to take the responsibility while shifting the blame on criminals. This was confirmed when the Premier of Gauteng province, Panyaza Lesufi was asked by Members of Provincial Legislature (MPLs) to provide a plan with timelines as and when the water crisis would be resolved in the province. Instead of directly responding to the question and providing a clear programme of action in terms of how the government will tackle the water challenges; the Premier opted to shift the blame on water tanker mafia as well as illegal connections (Capa, 2025).

Of course the Premier is partly spot on, however, the challenges go hand in hand with lack of government and water boards' investments on water infrastructure. The government must first sort out the water infrastructure in conjunction with the rooting out

of water tanker mafias and illegal connections. Interventions on the water crisis must run concurrently, meaning the government must invest more on water infrastructure while dismantling the water mafia syndicate.

However, to resolve the water challenges, the Department of Water and Sanitation (2015) indicates that South Africa requires at least R90 billion annual capital investment on water infrastructure over the next 10 years to resolve water crises across the country. This was outlined in the National Water and Sanitation Master Plan of the Department Water and Sanitation. Amongst other things, the investments aimed to prioritise the following needs:

- to clear the "remaining backlog in basic water and sanitation services (at current street tap service levels);
- critical refurbishment backlogs (caused by poor maintenance);
- critical renewals of aged infrastructure;
- provision for water resource developments identified in DWS planning studies;
- provision of new bulk, connector and reticulation infrastructure to meet the demands of population growth and agreed water use extensions aimed at promoting economic growth."

While in the City of Johannesburg, the Johannesburg Water agency indicated the city requires to invest at least R3.1 billion annually on water infrastructure over the next 10 years to revitalise its water infrastructure. This is because "26% of Johannesburg Water's infrastructure is expected to reach the end of its lifespan within the next decade" according to (Evans, 2024). As it stands, this is the confirmation that the current city funding model on water infrastructure fails to meet the required capital investments to enable the Johannesburg Water to replace and upgrade its infrastructure.

However, when the Deputy President of the Republic of South Africa, Paul Mashatile was closing the Water and Sanitation Indaba; he indicated that as of 28 march 2025, South Africa had secured R23 billion on investments for the construction, expansion and repairing of water infrastructure projects across the country. Based on Deputy President pronouncement, this fell short of the requirement amount of R90 billion per annum to fix water crisis in South Africa over the 10 years period (The Presidency of Republic of South Africa, 2025).

In responding to this massive crisis, the President Cyril Ramaphosa also signed into law the South African National Water Resources Infrastructure Agency State-Owned Company (SOC) Limited Act, 34 of 2024 on 27 August 2024 as part of legislative reforms and intervention to the water crisis in South Africa. With the implementation effect as of 07 February 2025, the legislation's main objectives is to develop and manage national water infrastructure including allowing the government to source or mobilise resources to construct new water infrastructure that will be circled with the current innovation models to further attract private sector investment.

3.5 The Biggest Threats to Water Infrastructure Investment in South Africa

The biggest threats observed by the researcher on water infrastructure investments in South Africa is the corruption, illegal connection, water tanker and construction mafias. The biggest corruption scandals are the Giyani and Hammanskraal watergate projects in which billions and millions of rands in investments went into wastage while the residents of Giyani and Hammanskraal remain without a treated, clean and drinkable water (Mokhomole, 2023:59). Poor governance and management including reinvestment to water infrastructure by municipalities and relevant water boards from the revenue collected were cited by Jacobs (2025) as amongst the biggest threats resulting from the ongoing water crisis in the country.

Another corruption scandal linked to the water mega infrastructure project is the 1998 successful trial of bribery and embezzlement involving several multinational companies and senior state officials in connection with Phase 1 of LHWP. Ardigó (2014:3) expressed that by far, the success of 1998 LHWP bribery and embezzlement trial proved to be an achievement or memorable point in the history of Lesotho towards the fight against corruption.

Around 2014/2015, similar allegations emerged implicating Lesotho senior public officials regarding the implementation of Phase 2 of the LHWP. According to amaBhungane (2015), an investigation was commissioned to look into the matter including the roles played by the implicated officials.

Below, the researcher listed and discussed some of the key biggest threats to water infrastructure investment in South Africa.

- Ineffective systems regarding the management of water projects in South Africa

The national, provincial and local spheres of government in South Africa have been neglecting the maintenance of water infrastructure. This was also accompanied by mismanagement and/ or delays of ongoing key water infrastructure projects such as Giyani Bulk Water Project (GBWP), Phase II of LHWP, Hammanskraal water project and uMkhomazi Bulk Water Project (uMBWP) to mention the few. Maluleke (2024) suggests that delays on several occasions point to poor governance, mismanagement, fraud, corruption, maladministration and irregularities linked to tendering and procurement processes of these water projects. On top of these factors, is the continuous NRW losses by municipalities that put the state fiscus and customers under

immense pressure in that customers struggle to cope with water outages/ shortages and while the government struggles with the maintenance and repairs of aging water infrastructure.

To date, the GBWP is delayed by almost 10 years with the initial budget allocation of R90 million. The budget has since ballooned from its initial allocation and is currently sitting at R2 billion as pointed out by Maluleke (2024), yet with no output to present from the project. Similarly, is the delay completion of Phase I for Rooiwal Wastewater Treatment Plant upgrade project with an estimated budget of R4 billion according to the DBSA, which serves as an implementing agent. Within the estimated budget of R4 billion, the CoT have committed to spend R450 million over the three years period towards Phase I that commenced in September 2023, with Phase IA and Phase IB set to be completed in April 2025 and September 2025 respectively (Pillay, 2023 & Moatshe, 2025). Moreover, the CoT urged that the remaining balance that is required for the completion of the projects needs to be sourced elsewhere (Pillay, 2023).

The project is scheduled or expected to be completed by June 2026 (Ramushwana, 2025) and it will be implemented into three (3) Phases. So far, Phase I had already encountered some delays with regard to its planned completion date. Delays means more money will be injected (needed) into the project that was not budgeted for. Delays means the diversion of funds from elsewhere, for instance, funds aimed to maintain other water infrastructures that are deteriorating faster while on the other hand, the CoT is struggling with water supply issues as it fails to meet the demand of the ever growing population.

On top of these systems' deficiencies in various water projects in South Africa are municipal debts to water boards that treat, clean and supply drinkable bulk water to municipalities. Over the past five years (from 2019 to 2024), municipal debts owed to water boards in South Africa have increased by 151%, a signal that the debt is no longer sustainable (it spiraled out of control) according to (Parliament of the Republic of South Africa, 2024). This puts more pressure on water boards finances and their operational cost that may signify a dire consequence to the innocent communities that receive water services from these stressed municipalities served by some of these water boards. Consequently, this has also become a biggest threat to the sustainability of these water boards, which in return they will be unable to treat, clean and provide a quality drinkable water to the affected municipalities and communities.

Subsequently to these ineffective systems regarding the management of water (poor governance and management) are the threats of hijacks or disruptions of water infrastructure projects by construction mafias. As cited in one of the researcher's manuscript, is the assassination of a Ward Councillor who was deployed to eThekwini metropolitan municipality by construction mafias who were competing to get control and/ or to gain a share (a peace of a pie) of R6 billion spending on uMgeni Water Lower uMkhomazi Bulk Water Scheme project by the municipality (Ardé, 2023). Such incidents including other acts of criminality and anarchy perpetrated by the construction and water taker mafias cannot be ruled out to the ongoing water infrastructure projects across the country, thus becoming the biggest threats to capital investments on other water infrastructure projects in South Africa.

- Lack of capital investment on water infrastructure

Another threat is the lack of capital investments in water infrastructure. The South African government requires a capital investment of R100 billion per annum in water infrastructure over a period of 10 years which will be a mammoth task to raise these funds by the government in collaboration with the private sector. This is because as of 28 March 2025, the South African government has secured R23 billion capital investments which fell short for the funding of seven water infrastructure projects according to (Odendaal, 2025). This means that the government has already fallen short of the required annual investments.

Considering that for economic growth and preservation of water which is already a scarcity in South Africa, these funds are desperately needed to be raised by the government in order to meet the obligations of delivering a treated, clean and drinkable water as well as to keep up with the growing population. Failure to raise these funds will result in continuous less upgrades, maintenance and non-expansion of water infrastructure to meet the ever growing demands by customers caused by amongst other things, the expansion of mines, industries, farms, manufacturing companies, urbanisation and population growth.

- The rising global temperatures which are accompanied by terrible weather conditions

The widespread and unpredictable weather patterns caused by climate change makes it difficult for the South African government to plan appropriately. The climate changes come with a lot of terrible weather conditions or threats such as heatwaves, drought, flooding and other related water disasters that exacerbate the already distressed and under-invested water infrastructure. Over and above these disasters associated with ever changing weather patterns is that South Africa is more dependent on surface water that is stored and distributed from dams, lakes and rivers rather than ground water. Consequently, it becomes difficult for the country to sustain and maintain amongst other things water, roads, dams and housing infrastructure which are most affected when weather patterns associated with El Niño and La Niño (which are complex in nature and becomes part of South Africans' leaving reality as of 2016 to date) hit the country so hard. In some instances the effects of climate change in South Africa resulted in water restrictions as preventative measure to day zero and/ or for a total system collapse.

- South African water infrastructure is in state of disrepair

The South African water infrastructure is currently in a bad condition due to decades of negligence or lack of maintenance by responsible municipalities, entities/ agencies, water boards, national & regional Department of Water and Sanitation. This was confirmed by Chagopa (2024) who highlights that South Africa had "a total of 577 (of 958) water supply systems that are in the low-risk category with 184 in the medium-risk category, 102 in the high-risk category, and 95 in the critical-risk category." Chagopa (2024) further confirms that the amount of NRW losses are due to the state of disrepair of water infrastructure in South Africa. The biggest threat is that if the status quo regarding the ongoing decay of water infrastructure and its distribution systems remain unchanged, its effects will lead to low economic growth.

To sum it up, the government's effort to enable economic growth through unlocking key infrastructure projects, responsible institutions developed the National Infrastructure Plan (NIP) and enacted CIPA legislation to protect these critical infrastructure against risks and threats (infrastructure-related crimes) posed by construction and water tanker mafias. There were certain risks and threats to infrastructure and its investments thereof identified by Smit (2022) and now incorporated within the Draft Phase 2 NIP 2050 to manage possible threats to infrastructure in future.

The main purpose of CIPA and NIP is to help the government and law enforcement agencies to strategical respond to infrastructure related crimes such as extortion and vandalism most perpetrated by construction and water tanker mafias respectively, and fraud and corruption perpetrated by government officials during the procurement processes of goods and services associated with infrastructure projects. So far, the enactment of CIPA and development of NIP has not yet yielded positive results as key infrastructure projects continue to be hijacked, delayed and vandalised by construction and water tanker mafias.

3.6 Observations by the Researcher

From Researcher's observation and lived-experienced, in some parts of Tshwane, Johannesburg's, Ekurhuleni, eThekwini and Nelson Mandela Bay residents are accustomed to the taps running dry due to water shortages and disruptions due to vandalism, sabotage by water tanker mafias in collision sometimes with some municipal officials. The researcher further observed that on a frequent basis, water shortages which are now becoming a crisis in some parts of these metropolitan municipalities while these municipalities source the services of water tankers to rescue the situation. In the meantime, the researcher further observed that the quality of water delivered or supplied by water tankers is often reported by the affected residents as of substandard contrary to the set required standards.

Another leading factor to the water crisis in metropolitan municipalities is the illegal connection. The researcher has observed the mushrooming of informal settlements in the cities resulted in them tapping into water supply systems to access water. In Tshwane, the illegal connections are not subjected to informal settlements only as there are also hundreds of big, upper-class and multi-million houses mushrooming in illegal Tshwane development such as Moshate Gardens, Leeuwfontein, Lotus Gardens, etc. which are also tapping into water supply systems to access water without being billed by the municipality. This was confirmed by Goba (2025) who pointed out that "there are 19 illegal developments in Tshwane" who are not billed by the municipality for rates and taxes.

The researcher further observed that the water crisis in most areas and villages is worse than in cities, to the extent that it has become a norm for communities to go weeks and months without water. Areas such as Turfloop in Capricorn District, Ga-Masemola in Sekhukhune District, and Ga-Maake in areas such as Tickyline, Rita, etc. and Ga-Sekgopo in Mopani District of Limpopo province; Qwaqwa in Thabo Mofutsanyane District of Free State province and Emalahleni township in Mpumalanga province. This is because residents in these areas are accustomed to the situation and no longer protesting about it. They have presented their discontent through all available channels with no improvements to their water crisis situations.

In areas such as Tickyline, Rita, etc. residents are used to purchasing water from water tankers. The business of water tankers has increased for the past decades within the area of Ga-Maake. While in some parts of Ga-Masemola area and other areas, the researcher observed that residents only see the flow of water in their taps when the country approaches Local and National elections, thus, the residents are also accustomed to such a situation.

In some instances, residents who can afford within the community areas outside metropolitan municipalities have resorted into the installation of boreholes to rescue themselves from the situation, while those who cannot afford are left out and the struggle continues with the hope that the government will someday come to their rescue. The installation of boreholes is not only subjected to communities, even farmers have resorted to it to arrest the situation mostly during the drought and water restriction seasons. Over and above, there are areas where communities do not get water at all from the source municipal water tankers including accessing it from the taps, meaning they are on their own, despite that water is declared by the United Nations General Assembly and the 1996 Constitution of the Republic of South Africa basic need for human rights.

3.7 Theoritical Framework: A Brief Overview

Economic Protectionism Theory

Johnston (2013:375-376) argues that most of the water tanker mafias including those that they collude with, within their respective municipalities, as well as those who tap into the water supply system or infrastructure illegally so; is that their main focus is on their economic self-interest rather than protectionism of water as a basic need for human rights. Since water is declared as a basic need for human rights by the United Nations General Assembly and the 1996 Constitution of the Republic of South Africa, for that reason, citizens need assurance that they will be provided with a treated, clean and drinkable water including sanitation and security (protectionism) to access it.

The certainty and protectionism is not only limited to citizens, also investors require such assurance by the government that there will be water supply that is stable to unlock economic activities in the manufacturing, industries, agriculture, construction and mining sectors of the economy in South Africa. Piętak (2014:50) presents the dependency of economic growth on multiplicity of aspects. Similarly to energy supply, effective water supply is the backbone of investments into the economy, as most of business operations such as manufacturing, industries, agriculture, construction and mining depend on water to keep the operations and economy growing. Most of the businesses might even collapse in areas where there are persistent water supply disruptions which may affect the economy as well as job losses.

Investments in agriculture and some of the infrastructure developments such as construction of houses for residential development and roads to connect regions for trade and transportation of goods, can be cited by the researcher as amongst the few key sectors that drive economic growth, therefore, their production depends mainly on effective water supply. These two sectors of economy (construction and agriculture) also employed a certain number of employees on a permanent basis as well as on seasonal basis. Meaning the decline in investments on construction and agriculture will have a negative impact on the production of agricultural products and transportation thereof, which will badly affect the economic growth while increasing unemployment.

As pro protectionism will argue, South Africa as water scarce country should not allow the situation whereby water tanker mafias, illegal connections, incompetence and negligence by some of the officials within the municipalities and government institutions responsible for water and sanitation runs a mock for their economic self-interest, because the state has the right to protect every drop of water for the benefit of citizens and its economy (Stefanescu, 2009:201). The South African government through its executives and its functionaries must not allow the situation to exacerbate further than where it is now, they must protect this precious resource by hook or crook against criminality and lawlessness.

Considering the narration of the theoretical framework above, the theory of economic protectionism is key to this study to highlight the importance of the government and its citizens to protect water and its infrastructure for the benefit of the economy and the workforce.

4. Summary of the Study Results

This paper found that South Africa is amongst the top 30 driest countries in the world, as a result, experiencing minimal rainfall including having less surface water which the country relies on. Over and above, the researcher observed that the persistent climate change, water leaks, poor maintenance, ageing infrastructure, illegal connection and criminality perpetuated by water tankers mafias which lead to government failure to meet water supply demand in the eve of urbanisation and population growth. With the exception of Western Cape province and Cape Town metropolitan municipality, the study further reveals that the situation is dire from the remaining provinces and metropolitan municipalities in South Africa, therefore, and requires urgent intervention. From what is being observed and coupled with the researcher's lived-experience is that the situation of water crises in most of the areas and villages across South Africa is worse than what is being observed and reported in cities; to a particular degree that the public have normalised it as they go by weeks, months and years without having seen the droplets of water in their taps.

As part of intervention by the government to this alarming water crisis, the study found that there are a quite number of water projects such as LHWP, Upper uMkhomazi Dam, Ntabelanga Dam, etc. committed by the government that are underway to rebuild water capacity, improve water supply to meet the demand and reduce NRW through expansion, repairing and refurbishments of current water infrastructure across the country. In addition to these water projects, a WCC was formed by a local group to assist the government in response to water leaks across South Africa. Since its formation in June 2022, the WCC has managed to respond and fix more than 9,700 water leaks across South Africa.

Sabotage on water infrastructure by water tanker mafias is also identified as the major problems and key driver to water crisis in South Africa. The study found that water tanker mafias capitalise on state failure to crack down this organised crime syndicate including the state failure to maintain and safeguard the existing water infrastructure by utilising technology to detect leaks. As a consequence, when there are water supply shortages, the government is forced to rely on these water tanker mafias by sourcing their services in the eve of water supply shortages. More importantly, the study reveals that the acts of water tanker mafias not only

threaten the livelihood of households, but also derail the growth of economy as well as diminishing public trust on government institutions to deliver bulk of treated, clean and drinkable water.

On top of this water crisis is the under-investments on water infrastructure projects. As of 28 March 2025, the government indicated that it has managed to secure a R23 billion water infrastructure investment, which fell short of the required R90 billion annually over the next 10 years' period in order to take the country out of the hook of water crisis. In addition to the water infrastructure investments shortfall, is the delay in completion of Phase 2 of LHWP and other water major projects such as a R6 billion uMgeni Water Lower uMkhomazi Bulk Water project that aimed to address water challenges in Gauteng and surrounding areas as well as eThekwini Metropolitan Municipality.

Apart from several pronouncements on water infrastructure projects by the executive led by the President including talking tough on water tanker mafias as well illegal connections during State of the Nation Address (SONA) and 2025 Water and Sanitation Indaba, such pronouncements and adamant on acts of criminality are not backed-up by the necessary action. Actually, it is contrary as organised crime such as a water tanker and construction mafias as well as illegal connection to water and electricity persist despite the government's tone suggesting that it's prepared to take firm action against any criminality that threatens the economy and livelihoods of inhabitants.

In a nutshell, the stable water supply is significant to social and economic stability in South Africa as its accessibility contributes positively to businesses (industries, manufacturing, etc.); essential services such as health, safety and security, etc.; and agriculture for food security. Be that as it may be, water mismanagement by municipalities and the public, and the ongoing water supply shortages in some parts of key metropolitan municipalities like Johannesburg, Ekurhuleni, Tshwane, eThekwini and Nelson Mandela Bay may lead to serious catastrophic such as public discontent, protests, economic hardship and/ or even conflict amongst the public or towards its government.

Ineffective systems caused by poor governance, mismanagement, fraud, corruption, maladministration and irregularities linked to tendering and procurement processes of these water projects, inadequate capital investment, the ongoing climate change which provide unpredictable and terrible weather conditions, and continuous disrepair of South Africa water infrastructure were noted or discovered as the biggest threats to water infrastructure investments in South Africa. The enactment of CIPA and development of NIP to prevent amongst other things construction and water tanker mafias to hijack, delay and vandalise key infrastructure projects aimed to unlock economic growth, has not yet yielded positive results.

5. Recommendations

These recommendations were made based on the findings of the study. Consequently, the study recommends that South African government must conscientise the public to adhere to set maximum usage litres of water per households in order to preserve it and including enforcing laws and by laws as a ramifications against households and citizens who misuse, illegal connect and tampering with water infrastructure, refiling of swimming pools and lawn irrigation during the day, washing cars with hose pipes which in most instance are left unattended, resulted in huge amount of water litres being lost. This can help the government to preserve enough water and effectively supply it to every household across the country and ease the looming water crisis. Talking tough without action by the executive and its functionaries becomes meaningless. The study recommends the enforcement of the laws against those who tampered with water infrastructure including illegal connections to preserve more water on the systems. The executive and its functionaries must directly deal with or confront lawlessness perpetuated by water tanker mafias or through illegal connections head-on without compromising law abiding citizens. In order to achieve the fight against construction and water tanker mafias including cracking down on illegal connections, the executive and its functionaries must assemble a critical infrastructure task team comprises of crime intelligence, municipal police, detectives, organised crime experts and other law enforcement agencies. In addition, the South African government must start to invest more in water infrastructure including servicing their debts with water boards on time to enable these boards to treat, clean and build more water reservoirs for storages and distribution purposes.

The study further recommends that the South African government must invest more on technology to detect anomalies on the systems caused by aging water infrastructure, illegal connections, water leaks or tampering with infrastructure in return for the government to stabalise water system and curb criminality to ease pressure on customers as well as enabling municipalities to collect require revenue and pay their respective water boards. The researcher believes that this will minimise water shortages and enable accessibility towards the customers in exchange for economic growth as they will be a reliable water supply for businesses, industries, essential and government workers to operate. To address the water crisis in South Africa, the study suggests that the South African government at local level must build internal capacity by insourcing water tankers, in that, the researcher believes this could minimise water tanker mafias. The South African government needs to put stricter control measures in place in order to maintain, expand and have better water infrastructure at local level including better governance and management on water boards and its

functionaries. There must be a concerted effort by law enforcement agencies in cracking down water tanker mafias, illegal connection and those who tamper with water infrastructure. In addition, there must be a concerted effort by all spheres of government, more specifically the local government sphere (municipalities that store and distribute water to households or customers) to invest on water infrastructure including maintenance to ensure that water tax and rates collected are spent responsibly. As things stand, customers believe that they have been asked to pay water services just to finance the municipality's operations while water distribution remains inefficiencies.

6. Conclusions

The South African water crisis cannot be subjected to climate changes, minimal rainfall and water scarce country; however, can be directed to South African government for poor governance and management, failure to invest on key components of water infrastructure such as expansion of pipes, pumps, reservoirs, treatment plants, reviving the existing infrastructure including lack of enforcement of the laws and by-laws against households, customers or citizens who tampered with water infrastructure and connects water illegal. The executive and its functionaries only talks tough on illegal connections and water tanker mafias that contribute significantly to NRW losses with no actions to effect their decisive tone, thus, resulting in South Africa continuing to experience water supply issues similar to that of the electricity crisis. The proliferation of water tanker mafias is as a result of poor governance and management, lack of capacity and incompetence at the local government level including weak law enforcement agencies in dealing with criminality and lawlessness. Both the police and NPA fail to arrest, charge and prosecute these emerging criminal syndicates.

Despite President Cyril Ramaphosa expresses approval of the new Bill to establishing the South African National Water Resources Infrastructure Agency SOC Ltd Act to reforms and intervene on water crisis in South Africa, the enactment of this legislation and its impact has not yet being beneficial and/ or yet produced any success and/ or stability to the water crisis in South Africa. There are no follow up actions by the executive and its functionaries to the diagnosed problems of water crisis by experts, engineers and researchers. The executive and its functionaries seem to lack an action plan with a timeframe to resolve the diagnose problem. In the long term, the water challenges will persist and affect mostly law-abiding customers or citizens who continue to honour their obligations for service that is not rendered to their satisfaction. The South African government is more tolerant of lawlessness than those who are law abiding citizens, often allows minor problems to evolve, escalate or exacerbate, and when it becomes a major problem, the government attempts to tackle it. In actual fact, the South African government remains a reactive government rather than proactive to various incidents of lawlessness in the country. The reactive part of the state could be linked to a number of instances such as electricity crisis which resulted in load shedding; misinterpretation and abuse of 30% subcontracting of the work to designated groups (local SMMEs) as stipulated in the Preferential Procurement Policy Framework Act, 5 of 2000 (PPPFA) resulted with the emergence of construction mafias masquerading as local business forums; gaps found in organised crime laws resulted in the grey listing of the country by Financial Action Task Force (FATF) and the ever continuous water shortages caused by poor maintenance of water infrastructure, water leaks, load shedding illegal connections including the ever growing municipal debts to water boards. The entire water system or grid is at the risk or brink of collapse while the water tanker mafias are thriving. The South African government will in short, medium and long term present proper plans, but failed to execute or implement some including monitoring and maintaining those that were implemented, thus, resulting in crisis.

To further arrest the water crisis in South Africa requires the public conscientisation of water usage and preservation including enforcement of by-laws by municipalities and consequences against citizens who misuse, illegally connect and tamper with government water infrastructure. As it stands, the executive and its functionaries have not set a precedent and/ or shown appetite to enforce the law or act to put an end to the maximum amount of water usage by households or customers. Contrary, the investment in water infrastructure would not be successfully achieved without dismantling both the construction and water tanker mafias; as construction mafias will halt ongoing water infrastructure projects through extortion while water tankers will tamper with water infrastructures so that the government can source their services. Failure by the South African government to crackdown and tackle these criminal networks, the water crisis situation will worsen further, the economy remains stagnant while delivery of water as basic needs will not be achieved.

Funding: The author received no financial support for this research, authorship, and/or publication of this article.

Data Availability Statement: The data of this study is available from the author upon reasonable request or readers can easily make use of sources listed on the Reference section of this manuscript or article.

Acknowledgments: The authors would like to thank Shaun Jacobs (Senior Journalist at Daily Investor) for his continuous reporting on the South African water crisis and its tanker mafias.

Conflicts of Interest: The author declares no conflict of interest.

References

1. Ajayi, V. O. (2023). A review on primary sources of data and secondary sources of data. *European Journal of Education and Pedagogy, 2*(3), 1–7.
2. Austin, Z., & Sutton, J. (2014). Qualitative research: Getting started. *The Canadian Journal of Hospital Pharmacy, 67*(6), 436–440. https://doi.org/10.4212/cjhp.v67i6.14.06
3. African Development Bank. (2021). *Lesotho Highlands Water Project (LHWP) Phase II: Appraisal Report*. African Development Bank Group, 27 October. Available online: https://www.afdb.org/en/documents/south-africa-lesotho-highlands-water-project-lhwp-phase-ii-project-appraisal-report (accessed on April 20, 2025).
4. amaBhungane. (2015). Mystery of fat payment for Lesotho king's pal. *amaBhungane*, 28 August. Available online: https://amabhungane.org/mystery-of-fat-payment-for-lesotho-kings-pal/ (accessed on April 20, 2025).
5. Ardé, G. (2023). Construction mafia, political murders run riot – and companies turn to taxi bosses for help. *News24*, 09 October. Available online: https://www.news24.com/fin24/companies/amabhungane-construction-mafia-political-murders-run-riot-and-companies-turn-to-taxi-bosses-for-help-20231009 (accessed on April 20, 2025).
6. Ardigó, I. A. (2014). Overview of corruption and anti-corruption in Lesotho. *Transparency Internal, 30*.
7. Asaram, L. S. (2022). LHWP Phase 2 to reach completion in 2028. *Engineering News*, 16 December. Available online: https://www.engineeringnews.co.za/article/lhwp-phase-2-to-reach-completion-in-2028-2022-12-16 (accessed on April 20, 2025).
8. Bartlett, K. (2022). Fears taps could run dry in South Africa's Eastern Cape. *VOA*, 24 June. Available online: https://www.voanews.com/a/fears-taps-could-run-dry-in-south-africa-s-eastern-cape-/6631973.html (accessed on April 20, 2025).
9. Bhuda, Z. (2025). New protection head brings wealth of experience to safeguard city's assets. *Pretoria Rekord*, 12 March. Available online: https://www.citizen.co.za/rekord/news-headlines/2025/03/12/new-protection-head-brings-wealth-of-experience-to-safeguard-citys-assets/ (accessed on April 20, 2025).
10. Bingham, A. J., & Witkowsky, P. (2022). Deductive and inductive approaches to qualitative data analysis. In C. Vanover, P. Mihas, & J. Saldaña (Eds.), *Analyzing and interpreting qualitative data: After the interview* (pp. 133–146). Thousand Oaks, CA, USA: SAGE Publications.
11. Capa, S. (2025). Gauteng premier blames syndicates, illegal connections for water challenges. *News24*, 12 March. Available online: https://www.news24.com/news24/politics/gauteng-premier-blames-syndicates-illegal-connections-for-water-challenges-20250312 (accessed on April 20, 2025).
12. Carnie, T. (2024). Billions down the SA big-city revenue drain as 40% of purified water is lost to pipe leaks. *Daily Maverick*, 06 April. Available online: https://www.dailymaverick.co.za/article/2024-04-06-billions-down-the-sa-big-city-revenue-drain-as-40-of-purified-water-is-lost-to-pipe-leaks/ (accessed on April 20, 2025).
13. Chagopa, A. (2024). South Africa's failing water infrastructure and the worsening plight of the vulnerable. *Daily Maverick*, 17 November. Available online: https://www.dailymaverick.co.za/article/2024-11-17-water-crisis-sas-failing-water-infrastructure-and-worsening-plight-of-the-vulnerable/ (accessed on April 20, 2025).
14. Creamer Media Reporter. (2023). The water mafia crisis sees SA's most vital resource under threat. *Engineering News*, 29 November. Available online: https://www.engineeringnews.co.za/article/the-water-mafia-crisis-sees-sas-most-vital-resource-under-threat-2023-11-29 (accessed on April 20, 2025).
15. Daily Investor. (2025). Cyril Ramaphosa's bullet train did not leave the station. *Daily Investor*, 25 February. Available online: https://dailyinvestor.com/south-africa/79306/cyril-ramaphosas-bullet-train-did-not-leave-the-station/ (accessed on April 20, 2025).
16. Evans, J. (2024). With a R27bn infrastructure upgrades backlog, Joburg Water takes financial reins back from city. *Daily Maverick*, 09 December. Available online: https://www.dailymaverick.co.za/article/2024-12-09-joburg-water-r27bn-infrastructure-backlog/ (accessed on April 20, 2025).
17. Goba, T. (2025). Tshwane Municipality establishes mayoral sub-committee to look into formalising 17 illegal townships. *EWN*, 15 May. Available online: https://www.ewn.co.za/2025/05/15/tshwane-municipality-establishes-mayoral-sub-committee-to-look-into-formalising-17-illegal-townships (accessed on April 20, 2025).
18. Infrastructurenews. (2025). Major water infrastructure projects underway across South Africa. *Infrastructurenews*, 25 October. Available online: https://infrastructurenews.co.za/2024/10/25/major-water-infrastructure-projects-underway-across-south-africa/ (accessed on April 20, 2025).
19. Jacobs, S. (2023). South Africa getting new R3.2 billion private Afrikaans university campus. *Daily Investor*, 23 February. Available online: https://dailyinvestor.com/south-africa/78699/south-africa-getting-new-r3-2-billion-private-afrikaans-university-campus/ (accessed on April 20, 2025).

20. Jacobs, S. (2025a). New mafia taking over South Africa. *Daily Investor*, 01 April. Available online: https://dailyinvestor.com/south-africa/83422/new-mafia-taking-over-south-africa/ (accessed on April 20, 2025).
21. Jacobs, S. (2025b). Social unrest warning for South Africa. *Daily Investor*, 02 April. Available online: https://dailyinvestor.com/south-africa/83454/social-unrest-warning-for-south-africa-5/ (accessed on April 20, 2025).
22. Jacobs, S. (2025c). South Africa's infrastructure on the verge of collapse. *Daily Investor*, 14 March. Available online: https://dailyinvestor.com/south-africa/81404/south-africas-infrastructure-on-the-verge-of-collapse/ (accessed on April 20, 2025).
23. Johnston, C. D. (2013). Dispositional sources of economic protectionism. *Public Opinion Quarterly, 77*(2), 574–585.
24. Leavy, P. (2022). *Research design: Quantitative, qualitative, mixed methods, arts-based, and community-based participatory research approaches*. New York, NY, USA: Guilford Publications.
25. Libera, M. (2025). Mafia siege in South Africa. *BusinessTech*, 05 February. Available online: https://businesstech.co.za/news/business/810155/ (accessed on April 20, 2025).
26. Maluleke, L. (2024). Poor governance exacerbates South Africa's water crisis. *Good Governance Africa*, 25 March. Available online: https://gga.org/poor-governance-exacerbates-south-africas-water-crisis/ (accessed on April 20, 2025).
27. Mnisi, N. (n.d.). Water scarcity in South Africa: A result of physical or economic factors? *Helen Suzman Foundation (HSF)*. Available online: https://hsf.org.za/publications/hsf-briefs/water-scarcity-in-south-africa-a-result-of-physical-or-economic-factors (accessed on April 20, 2025).
28. Moatshe, R. (2025). Rooiwal Waste Water Treatment Plant upgrade nears completion, promising clean water for Hammanskraal. *IOL*, 16 January. Available online: https://www.iol.co.za/news/south-africa/rooiwal-waste-water-treatment-plant-upgrade-nears-completion-promising-clean-water-for-hammanskraal-0eec0b81-da34-4223-8764-48208ad3ccb2 (accessed on April 20, 2025).
29. Mokhomole, T. D. (2023). The mandate of forensic investigations unit in the fight against fraud, corruption, financial misconduct, irregularities and maladministration in the public sector of South Africa. *Journal of Studies in Social Sciences and Humanities, 9*(1), 58–71.
30. New Development Bank. (2023). *South African municipal water supply and sanitation program*. New Development Bank, 11 July. Available online: https://www.ndb.int/project/south-africa-municipal-water-supply-and-sanitation-program/ (accessed on April 20, 2025).
31. Odendaal, N. (2025). New path charted for water sector, says Ramaphosa. *Engineering News*, 31 March. Available online: https://www.engineeringnews.co.za/article/new-path-charted-for-water-sector-says-ramaphosa-2025-03-31 (accessed on April 20, 2025).
32. Pillay, K. (2023). Hammanskraal taps will have clean water by 2026 if R4 billion project goes as planned. *IOL*, 01 June. Available online: https://www.iol.co.za/news/hammanskraal-taps-will-have-clean-water-by-2026-if-r4-billion-project-goes-as-planned-e9c0463f-a3ed-4dc1-863b-cc565a6046e7 (accessed on April 20, 2025).
33. Ramushwana, A. (2025). Tshwane Mayor to assess Rooiwal wastewater treatment plant upgrades. *Eyewitness News*, 16 January. Available online: https://www.ewn.co.za/2025/01/16/tshwane-mayor-to-assess-rooiwal-wastewater-treatment-plant-upgrades (accessed on April 20, 2025).
34. Simelane, L. (2025). Tshwane mayor declares: 'Every resident deserves a roof over their head and basic services'. *City Press*, 10 April. Available online: https://www.news24.com/citypress/politics/tshwane-mayor-declares-every-resident-deserves-a-roof-over-their-head-and-basic-services-20250410 (accessed on April 20, 2025).
35. Smit, J. (2022). Laws in the pipeline – curbing the construction mafia. *Werksmans Attorneys*, 03 November. Available online: https://www.werksmans.com/legal-updates-and-opinions/laws-in-the-pipeline-curbing-the-construction-mafia/ (accessed on April 20, 2025).
36. South Africa. (1996). *The Constitution of the Republic of South Africa Act, No. 108 of 1996, as amended*. Pretoria, South Africa: Government Printer.
37. South Africa. Department of Water and Sanitation. (2015). *National Water and Sanitation Master Plan*. South African Government, 01 May. Available online: https://www.gov.za/sites/default/files/gcis_document/201911/national-water-and-sanitation-master-plandf.pdf (accessed on April 20, 2025).
38. South Africa. Department of Water and Sanitation. (2023). Water and Sanitation releases 2023 full Blue Drop Report. *South African Government*, 05 December. Available online: https://www.gov.za/news/media-statements/water-and-sanitation-releases-2023-full-blue-drop-report-05-dec-2023 (accessed on April 20, 2025).
39. South Africa. Parliament of the Republic of South Africa. (2024). Media statement: Astronomical increase in municipal debt to water board requires immediate action. *Parliament*, 27 August. Available online: https://www.parliament.gov.za/press-releases/media-statement-astronomical-increase-municipal-dept-water-board-requires-immediate-action (accessed on April 20, 2025).
40. South Africa. The Presidency of Republic of South Africa. (2025). Closing remarks by Deputy President Shipokosa Paulus Mashatile, Chairperson of the Water Task Team during the National Water and Sanitation Indaba, Gallagher Convention Centre. *Public Now*, 28 March. Available online: https://www.publicnow.com/view/4377EF7B5DAF4C22F92ECD2CA2BF06F85837B70E (accessed on April 20, 2025).

41. South Africa. The Presidency. (2024). President Ramaphosa assents to law advancing water security for South Africa, 27 August. Available online: https://www.thepresidency.gov.za/president-ramaphosa-assents-law-advancing-water-security-south-africa (accessed on April 20, 2025).
42. South Africa. (2000). *The Preferential Procurement Policy Framework Act, No. 5 of 2000*. Pretoria, South Africa: Government Printer.
43. South Africa. (2019). *The Critical Infrastructure Protection Act, No. 8 of 2019*. Pretoria, South Africa: Government Printer.
44. South Africa. (2024). *The South African National Water Resources Infrastructure Agency SOC Limited Act, No. 34 of 2024*. Pretoria, South Africa: Government Printer.
45. South Africa. (2025). *State of the Nation Address by President Cyril Ramaphosa*. Available online: https://www.stateofthenation.gov.za/assets/downloads/SONA_2025_Speech.pdf (accessed on April 20, 2025).
46. Stefanescu, F. (2009). The economic crisis and protectionism. *Romanian Economic and Business Review, 4*(3), 199.
47. Stoll, D. (2024). Water crisis in South Africa: Causes, effects, and solutions. Earth.Org, 29 May. Available online: https://earth.org/water-crisis-in-south-africa/ (accessed on April 20, 2025).
48. Sutton, J., & Austin, Z. (2015). Qualitative research: Data collection, analysis, and management. *The Canadian Journal of Hospital Pharmacy, 68*(3), 226.
49. Tenny, S., Brannan, J. M., & Brannan, G. D. (2017). *Qualitative study*. Available online: https://www.ncbi.nlm.nih.gov/books/NBK470395/ (accessed on April 20, 2025).
50. United Nations Human Rights. (2010). About water and sanitation. *United Nations*, 28 July. Available online: https://www.ohchr.org/en/water-and-sanitation/about-water-and-sanitation (accessed on April 20, 2025).
51. Vaismoradi, M., Jones, J., Turunen, H., & Snelgrove, S. (2016). Theme development in qualitative content analysis and thematic analysis. *Journal of Nursing Education and Practice, 6*(5), 100–110. https://doi.org/10.5430/jnep.v6n5p100