

Barriers to Successful Implementation of Coproduction in Potable Water Service Delivery in the Mncwasa Water Scheme

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Abstract

Purpose: This study assessed coproduction barriers that are affecting sustainable potable water supply in the Mncwasa Water Scheme, South Africa.

Methods and Design: We employed a qualitative research approach and a case study design, using the Mncwasa Water Scheme as the case. Purposive sampling was employed. Data was collected using both primary and secondary methods. Data collected in this study were analysed using thematic analysis, during which five main themes emerged.

Findings: The study revealed several coproduction barriers affecting the sustainable potable water supply in the Mncwasa Water Scheme. These challenges include institutional capacity and financial constraints, infrastructure challenges, ambiguous policy and regulatory frameworks, low levels of community engagement and participation, and power imbalances.

Recommendations: To address the revealed challenges, deliberate efforts must be made at the local level to foster the inclusion of marginalised groups in decision-making. The municipality must provide resources, including skills development and training programmes, to community members to enable them to fully participate in coproduction initiatives. Massive investment in both centralised and decentralised infrastructure should be prioritised to build resilient water systems. Community members' involvement in infrastructure planning and management is key to ensuring that projects meet community needs.

Originality/value: This paper contributes to the practical understanding of co-production in developing countries and the potential of such co-production for improving clean water access. To the best of the authors' knowledge, no previous scientific research has studied how co-production can improve and sustain access to clean water sources in developing countries, and this paper aims to fill this gap.

Keywords: Coproduction, Municipality, Potable water, Water scheme, Service delivery

1 Introduction

The lack of potable water is a pertinent issue worldwide, as recognised by the Sustainable Development Goals, which explicitly focus on ensuring the availability and sustainable management of potable water and sanitation for all (United Nations, 2017). 703 million people lack access to clean water globally, over 320 million of them living in Sub-Saharan Africa (Kwakwa, 2024; United Nations, 2025). According to the World Health Organisation (2017), eight in every ten people lack access to potable water in rural areas within Sub-Saharan Africa. The water access statistics in Sub-Saharan Africa mirror those in South Africa, where more than 7 million people living in rural areas lack access to potable water (Stats SA, 2022). The challenges of potable water delivery in South Africa are enormous and complex, as they mostly emanate from the legacies of apartheid, spatial injustice and segregated settlement, which left many black and rural areas underdeveloped (Kuhlengisa, 2021).

This problem also applies to the Amathole District Municipality, where the Mncwasa Water Scheme is situated. While the need for effective potable water provision is great, this municipality lacks the financial

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means to address it (Hutete & Sibanda, 2022). This does not entail that improving access to potable water for people within this municipality is impossible. However, it requires a multi-agency approach in which various stakeholders participate in potable water delivery. This paper argues that engaging various stakeholders through coproduction, as done in the Mncwasa Water Scheme, could be a successful strategy if implemented effectively. Such co-production could assist in efforts to enhance information flows, optimise policies by incorporating diverse views, harness community resources, and improve the effectiveness of potable water service delivery (Kuhlengisa et al., 2024; Mangai & De Vries, 2018).

The Mncwasa Water Scheme is designed to provide sustainable potable water to 3300 households; however, despite coproduction efforts aimed at sustainable provision of potable water by municipal employees, Equality Collective (an activist organisation based in the area), villagers, traditional leaders and ward councillors, water taps have often been dry (Steyn, 2024). Ideally, effective co-production involving municipal officials, civil society groups, community members, the business community, and ward councillors would guarantee a constant potable water supply and maintenance; however, the persistent challenges in the Mncwasa water scheme have led to health risks and a diminished quality of life for the affected population. In response to the above assertion, this research seeks to answer several research questions.

The main research question that guides this study on engaging participants in the provision of potable water is the following:

RQ1: *What are the barriers affecting the successful implementation of coproduction in potable water service delivery in the Mncwasa water scheme within the Eastern Cape Province of South Africa?*

The following secondary questions arise from this main question:

RQ2: *What institutional challenges hinder effective co-production in the Mncwasa Water Scheme?*

RQ3: *What role does community engagement and participation play in addressing co-production challenges in the Mncwasa Water Scheme?*

RQ4: *What technical and infrastructure challenges must be addressed to ensure sustainable co-production in the Mncwasa Water Scheme?*

By sampling the viewpoints and experiences of municipal officials, civil society groups, community members, business owners, and ward councillors regarding co-production challenges affecting sustainable delivery of potable water in the Mncwasa water scheme, this study enriches the academic discourse on co-production in water management, offering practical lessons for enhancing collaborative governance and community involvement. The study outcomes are based on in-depth interviews with these stakeholders.

The article is organised as follows: a theoretical framework in which systems theory is discussed in depth; a literature review; and, in this section, the background and factors affecting coproduction. This is followed by the research methodology section and presentation of the findings and finally, the discussion of findings, recommendations, and conclusions.

2 Theoretical framework

This study is underpinned by the Systems theory propounded by Ludwig von Bertalanffy in the 1940s (Laszlo, 1996). Systems theory holds that systems ought to be understood as dynamic entities with emergent properties arising from the interactions among their components. The five key principles of systems theory are interconnectedness, emergence, feedback loop, holism and adaptation. Meadow (2008) posits that a system is an interconnected set of elements organised coherently to achieve something. The second principle is emergence, defined by Green (2023) as the appearance of patterns, behaviours, or properties in a system that cannot be determined from the analysis of individual parts alone. For a system to adapt to change or maintain its stability, it must rely on feedback (Wellmanns & Schmiemann, 2020).

Adaptation entails that systems are not static as they evolve and adapt based on internal and external environments.

This study employed a systems-theory lens to analyse coproduction in potable water provision. Coproduction is a dynamic, interconnected process in which stakeholders interact with a socio-technical system to co-create value. The interdependencies among stakeholders are crucial because inputs from all parties are essential to effective outcomes, and the feedback loop safeguards responsiveness to changing needs. The theory reveals how emergent properties such as trust and collaboration arise from simultaneous interactions among stakeholders, and how disruptions to a system component can negatively affect the entire potable water delivery system.

3 Literature review

In this section, the research will define the historical, ideological, and cultural factors influencing coproduction. This will be followed by a discussion of the factors affecting the effective implementation of coproduction in service provision, and the final part will analyse different pieces of legislation supporting the implementation of coproduction.

3.1 *Conceptualising coproduction*

Elinor Ostrom coined the term co-production at the University of Indiana in the 1970s when she was explaining why the police need the community as much as the community need the police. In the 1980s, Anna Coote and others at the Institute for Public Policy Research (IPPR) used the term coproduction to explain why doctors need patients as much as patients need doctors, and argued that when this relationship is forgotten, both sides fail. In the same breath, we also argue that in the context of this study, the municipality needs the community members as much as the community members need the municipality, and harnessing this collaborative approach would result in effective potable water provision.

Interest in coproduction faded in the 1990s; however, this concept gained traction in the 21st century with the emergence of the sixth Public Administration paradigm aimed at moving from government to governance. Ikeanyibe et al. (2017) posit that the early 2000s witnessed widespread recognition of the multi-sectoral nature of government, which recognised the complex relationship among stakeholders. Scholars have argued that it emphasises a pluralistic model of public service based on inter-organisational relationships, networks, collaborative partnerships, and other forms of multi-actor policymaking and public action (Emerson & Nabatchi, 2015; Nabatchi et al., 2017). Fotaki (2015) believed that the global recession around 2007 strengthened interest in coproduction due to fiscal constraints. Though all these scholars are well on track in explaining why coproduction has gained traction over the years, we believe it has gained popularity in its quest to find community solutions to community problems, involving community members who are directly involved in or affected by the projects.

Coproduction is defined as a collaborative process through which inputs for service provision are contributed by individuals outside the same organisation (Ostrom, 1996). Similarly, Faldi et al. (2022) define coproduction as a practice where actors from different organisations contribute collectively to produce or enhance a service or part of it. For Jakoet-Salie and Ramolobe (2023), coproduction is a collaborative approach involving service providers and service users to design, produce and deliver a service. Coproduction is a process in which inputs from individuals outside the same organisation are transformed into goods and services (Khine et al., 2021).

All the above definitions have commonalities as they emphasise collaboration and several stakeholders' involvement in service delivery. Consequently, we cannot comprehend the concept of co-production by focusing solely on state agencies' roles in providing services. In line with the above definitions, it can be argued that coproduction is premised mainly on the basic principle that the consumption and production of public services must involve citizen participation. Within the parameters of this study, we define coproduction as a practice, institutionalised or not, frequently collaborative, involving individuals or groups of citizens (Ward councillors, traditional leaders, community members and civil society groups),

intermediaries and the state (Water Boards, water service providers, business community, the municipality, Department of Water and Sanitation) in one or more phases of the service delivery cycle: co-planning, co-design, co-management, and co-assessment.

3.2 *The co-production system in the delivery of water service*

It is important to understand how potable water coproduction works within a system. Figure 1 presents a framework for co-produced water supply and sanitation services, emphasising the collaborative roles of various actors rather than top-down approaches.

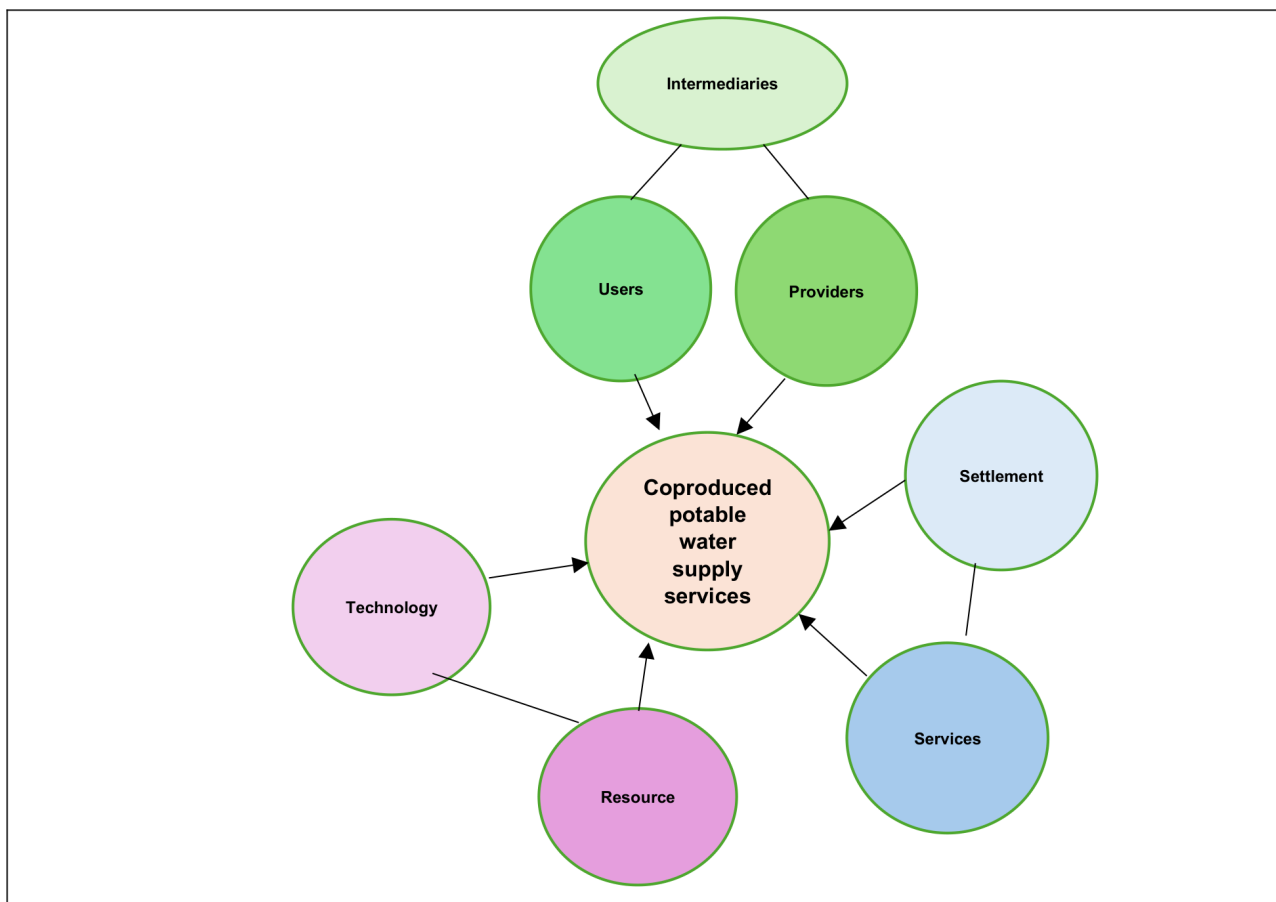


Figure 1: Inputs to the coproduction of a potable water supply.

The figure depicts a coproduced water supply and sanitation service, with its focus on services delivered through shared responsibility. In line with the above, the users are not just passive recipients, but the community members actively participate in the process. Providers are organisations responsible for potable water delivery, including government entities. Intermediaries are organisations that assist in facilitating co-production. Settlement refers to the community where services are provided, which entails the quality, standards and type of water delivered. Resources are the funding, water sources and other resources required, and Technology is the type of technology employed when delivering potable water.

3.3 *Factors affecting the success of coproduction in the delivery of potable water*

Coproduction has gained traction over recent years as the best alternative in service provision, and its contribution to effective service delivery is well documented (Mangai & De Vries, 2018; Zwane & Matsiliza, 2022). However, the implementation of coproduction, mostly in the countries of the global South, has not been smooth as it continues to be hampered by institutional, systemic and relational factors (Khine

et al., 2021). Literature has pointed out that low citizen engagement and participation have negatively impacted the implementation of coproduction of services (Matlala, 2024; Matloga et al., 2024; Nyama & Mukwada, 2023). Several factors cause this low engagement and participation in coproduction. They include lack of trust, lack of interest, power imbalances, misalignment of expectations, cost of participation, and exclusionary practices.

Trust is a requirement for coproduction because for people to participate, they must have trust and believe that the process will yield the desired results. Holum (2022) defined trust as a “psychological state where vulnerability is accepted based on positive expectations of the intentions or behaviour of another”. To successfully implement coproduction, citizens must trust society’s political system, actors, values and institutions. However, in most instances, historical injustices contribute to citizens’ lack of trust, resulting in reluctance to engage and participate. Taylor et al. (2020) opined that in South Africa, distrust emanates from previous experiences of broken promises or unfulfilled commitments by the local sphere of the government. This has resulted in the disengagement of citizens in coproduction activities as they may perceive that their contribution will not be considered. For Christensen and Lægreid (2020), a lack of trust can result from historical injustices such as systemic discrimination, which might have implanted long-lasting scepticism about institutions’ intentions. Hankerson et al. (2022) posit that traumatic events or systemic injustices, selfishness (corruption) and incompetence can result in intergenerational mistrust that makes it difficult for community members to trust external entities. In line with the above, we argue that the legacies of apartheid may be a contributing factor to low citizens’ engagement and participation in the coproduction of services in South Africa. The tenacious structural inequalities characterised by unemployment, poverty and inadequate access to basic services have resulted in many citizens, especially the marginalised, disengaging from participatory processes, regarding them as ineffective or tokenistic attempts to address the challenges they face, limiting the transformative potential of co-production.

Power imbalances are another factor noted in the literature as negatively affecting the implementation of coproduction initiatives (Makiva et al., 2021; Mankuebe & Manicom, 2020; Sibanda & Lues, 2021). Sibanda and Lues (2021) believe that government departments or service providers, in most instances, hold disproportionate power. As a result, community members perceive that their involvement is merely tokenistic or manipulated, resulting in them not engaging or participating in coproduction initiatives. The absence of a deliberate mechanism to challenge existing hierarchies renders coproduction a reinforcer of domination rather than empowerment. Mankuebe and Manicom (2020) state that power imbalances erode public trust, negatively affecting co-production, which is inherently negotiated, emergent, and reliant on a range of actors with shared constructive motivations. When citizens feel that their power to influence the outcome is limited, they develop mistrust towards the coproduction initiative. The above argument is in line with Selepe (2023)’s findings, which revealed that citizens’ participation during the implementation of the integrated development plan is low because citizens have lost interest as they perceive that their participation in local affairs is at the lower rungs of Arnstein (1969)’s participation ladder, at the level of tokenism. Once citizens perceive that decisions are predetermined by those in power, the likelihood of their active engagement is low, which defeats the purpose of coproduction.

Co-production aims to ensure the effective provision of potable water; in some cases, infrastructure challenges hinder it (Vyas-Doorgapersad, 2023). Rosati et al. (2020) note that one of the pressing issues in potable water provision is ageing and deteriorating infrastructure. The literature indicates that outdated water systems result in inefficiencies, such as leaks and interruptions in water service delivery (Campanale et al., 2020; Kinoshita et al., 2020). In most countries of the Global South, significant amounts of water are lost daily through leaks, undermining the reliability of water services. When this happens, it affects coproduction as community members lose trust, discouraging their effective participation in coproduction initiatives (Biljohn & Lues, 2020; Kinoshita et al., 2020). Mguli (2022) argues that infrastructure deficiencies create significant barriers to scaling up coproduction, as community members’ contributions cannot compensate for these challenges. It is worth noting that, in terms of infrastructure challenges, coproduction is affected not only by infrastructure directly linked to water provision, such as pipes and pumps. Infrastructure related to road networks plays a vital role as it creates logistical barriers that hinder community involvement in coproduction.

3.4 *Legislative framework*

Several pieces of legislation in South Africa support the coproduction of services. According to South Africa's Constitution (1996), section 195, "people's needs must be responded to, and the public must be encouraged to participate." The above statement is supported by the National Water Act (NWA) of 1998, which advocates collaborative approaches to water management that consider socio-economic factors and the environment. The Water Services Act of 1997 stipulates that partnerships among the municipality, community members and the business community must be supported to improve the delivery of potable water services. However, although all these legislations support community participation in matters that affect them, they remain vague about the nature and level of participation expected.

4 **Methods and design**

This study employed a qualitative research approach and a case study design to understand the challenges of coproduction affecting the sustainable potable water supply in the Mncwasa water scheme in the Eastern Cape province of South Africa. The researchers purposively sampled 12 participants for this study who were perceived to have adequate knowledge about the topic under investigation. These 12 participants included two employees from the Amathole District Municipality, five community members, two business members, and three members of civil society groups. This study's sample size was based on the nature and scope of the study, data saturation, and participants' availability. In addition, the selection of only 12 participants in this study is justified by several scholars who argue that a sample size between 5 and 50 participants is acceptable in a qualitative study because the aim is not to generalise the findings (Morse, 2015; Moser & Korstjens, 2018; Vasileiou et al., 2018).

In-depth interviews were conducted with the study participants, and the topics to be discussed were predetermined; however, how the interviews proceeded determined the way the questions were posed and the order in which they were asked. The topics included questions about existing institutional and governance challenges, the impact of financial constraints on coproduction, challenges in community engagement, and the impact of infrastructure challenges on coproduction. All interviews lasted between 45 minutes and one hour.

The study followed ethical guidelines, including obtaining informed consent, maintaining confidentiality, and ensuring voluntary participation. An ethical clearance certificate was obtained from the University of Fort Hare Research Ethics Committee. All participants were informed about the study's purpose and signed consent forms prior to the interviews. Data confidentiality was maintained through anonymisation, and ethical approval was obtained before data collection. Participants were allowed to withdraw at any time without penalty, and their anonymity and confidentiality were strictly protected. Permission for data collection was granted by the Mncwasa Water Scheme.

Data collected from the participants was analysed using thematic analysis. When conducting thematic analysis, the researchers followed the six steps identified by Braun and Clarke (2006): becoming familiar with the data, generating initial codes, searching for themes, reviewing themes, defining themes and doing a write-up. We became familiar with the data set by reading and making notes of the first impressions. This was followed by the researchers working through each transcript, coding every text segment that was perceived to be relevant for addressing our research questions. The third step was achieved by examining the codes, and most of them clearly fit into a theme. These themes were descriptive in nature. During the review of the theme stage, the researchers read the data related to each theme and determined if the data really did support it. In the fifth step of defining the themes, the researchers identified the 'essence' of each theme and how the themes relate to each other. The final stage was the write-up, which is presented in the following section.

5 Study area

To revive the Mncwasa water scheme, villagers have collaborated with the Amathole District Municipality to fix the potable water supply (Steyn, 2024). The Amathole District Municipality (ADM) comprises six local municipalities: Raymond Mhlaba, Great Kei, Amahlathi, Mquma, Mbashe, and Ngqushwa. The Mncwasa water scheme is situated in Mbashe, a local municipality in Nqileni village. Given that this study concerns the provision of potable water, the focus is on ADM rather than Mbashe Local Municipality because, under the Water Services Act (Act 108 of 1997), ADM is a water service provider and water service authority within this jurisdiction. The Mncwasa water scheme was built in 2015 to supply potable water to 3,300 households. However, in 2020 citizens felt the impact of poor maintenance as they could not access potable water. To address water challenges in these areas, Equality Collective, as a civil society group, formed a coalition with traditional leaders, ward councillors, the business community, and community members to investigate the problems and assist the municipality in solving them (Steyn, 2024). This community water-monitoring system of the water scheme is called Amanzi Kumntu Wonke (AKW). The AKW has recruited 32 volunteers based in Nqileni village in Xhorha Mouth to conduct daily monitoring by visiting the reservoirs to check if the community is receiving water, identify any leaks, and report back. AKW will then use the information collected by these volunteers in their deliberations with the municipality. Table 1 depicts the characteristics of potable water co-production in the Mncwasa water scheme.

Table 1: Characteristics of potable water co-production in the Mncwasa water scheme

Dimensions	Category	Type	Factors	Attributes
Actors	Water Users	Community member Traditional leaders Ward councillors	Level of co-production Role of users	Co-management & co-assessment Citizens/customers/ monitor the availability of water.
			End-users' motivation/willingness Norms and social capital	Individual motivation to satisfy a basic need collectively Low socio-economic capacity
Actors	Intermediaries	Amanzi Kumntu Wonke (AKW) Water Ambassadors Mariswe Pty Ltd	Degree of institutionalisation	Users formally elect community groups and directly connect with the local government.
			Bodies in charge and type	A group of 32 volunteers monitoring the availability of water in their reservoirs and reporting any leaking taps, BP tanks, or broken infrastructure along the scheme.
Actors	Providers	Amatola Water Board ADM	Form of government Responsible agency and type	Decentralised form of government Water boards provide technical assistance to the municipality.
Flows	Resources Technology	Government Funding	Diversity of the resource	Municipal infrastructure grant
			Technical complexity	Equitable shares 32 volunteers visit the reservoirs to check if they are receiving water.
			Infrastructure portfolio	Tertiary water pipes, booster pumps, filtering, water meters at households, communal taps, and 31 reservoirs are interconnected.

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Dimensions	Category	Type	Factors	Attributes
Areas	Settlement	Rural areas	History	Originally, the infrastructure was provided by the municipality, and users shared water from collective water tanks and communal taps.
Areas	Services		Accessibility	Maximum of 200 meters to water points/water prices subsidised through indigent policy.
			Regularity of the service	Generally, 1-2/days a week, and a few hours a day

Sources: Researchers' own construction, 2025

6 Findings

The study aimed to assess the coproduction challenges affecting sustainable potable water supply in the Mncwasa Water Scheme in the Eastern Cape Province. To this end, the researchers employed a qualitative research approach and a case study research design, a sample of 12 participants and in-depth interviews to understand the viewpoints and experiences of municipal officials, civil society groups, community members, the business community, and ward councillors. To assess these coproduction challenges, participants were asked to identify the institutional and governance challenges hindering effective coproduction in the Mncwasa water scheme, to analyse the role community engagement and participation play in addressing coproduction challenges, and to analyse the technical and infrastructure challenges that must be addressed to ensure sustainable co-production in the Mncwasa water scheme. The study revealed that low levels of community engagement and participation, power imbalances, unclear policies and regulatory frameworks, and infrastructure challenges are the barriers to the successful implementation of coproduction initiatives.

6.1 Institutional and governance challenges

To determine the institutional and governance challenges affecting the effectiveness of coproduction in the provision of potable water, participants were asked to identify the challenges hindering effective coproduction in the MNCWASA Water Scheme. The study revealed that low levels of community engagement and participation, power dynamics, inadequate institutional coordination, unclear policies, and regulatory frameworks lead to overlapping roles and responsibilities.

6.2 Low level of community engagement and participation

The study revealed that low levels of community engagement and participation have negatively impacted coproduction initiatives to provide potable water in the Mncwasa water scheme. All participants agreed that community engagement and participation are low, with community members arguing that their participation is more symbolic. Participants revealed the following:

"We engage with the municipality and participate during our joint meetings with all the stakeholders to enhance the provision of potable water. However, I believe these meetings are merely perfunctory gestures, as our opinions are often dismissed. I am sure that municipal officials would have already made up their minds before this meeting even commences." *[Participant 2]*

"Our participation in the Mncwasa water scheme is merely tokenistic as we do not partake in decision-making regarding the provision of potable water; our responsibility is to provide information to the municipality. I am one of the 32 volunteers responsible for manually checking if water reaches the reservoir and providing the information to the municipality." *[Participant 1]*

“It is disheartening to observe how municipal officials offer symbolic gestures without substance to the idea of inclusive decision-making. We are asked for our input during these public meetings, but such leaders proceed to implement their agenda regardless of what we say. Witnessing leaders offering only hollow reassurances feels disheartening, leaving us feeling overlooked and undervalued.” **[Participant 5]**

“We are only asked for comments or to give feedback without being actively involved in decision-making; for example, we do not even know how funds are allocated or how decisions are made. It seems like everything is decided behind closed doors.” **[Participant 4]**

These statements reveal that community members are not directly involved in decision-making about potable water service delivery. This low level of community engagement in coproduction has led to ineffective potable water delivery in the Mncwasa water scheme because decisions are made without considering the perspectives of the community, resulting in a lack of trust and ownership in the services provided.

6.3 Power imbalance

Coproduction of services entails that all stakeholders participate as equal partners. However, the situation on the ground at the Mncwasa Water Scheme reflects otherwise. Power dynamics among different stakeholders have impeded the successful implementation of the co-production of potable water supply in the Mncwasa Water Scheme. Eleven out of twelve participants acknowledged these power dynamics, with appointed municipal officials pointing out elected officials, community members pointing out municipal officials, the business community and civil society groups. Participants revealed the following:

“Project priority decisions are mainly influenced by political agenda rather than technical expertise; in most instances, these politicians override our (municipal officials’) recommendations, creating inefficiencies and delaying potable water delivery. This power struggle has harmed our co-production initiatives because it has led to the mismanagement of resources and community members’ lack of trust in governance structures.” **[Participant 7]**

Community members reflected on the following:

“We are alienated from decision-making by municipal officials who perceive us as passive recipients instead of active collaborators. This has reduced our willingness to participate and weakens the sustainability of co-produced water services in the Mncwasa water scheme.” **[Participant 3]**

“In our meetings with local businesses, due to their financial leverage, they dominate discussions regarding the water scheme infrastructure, and this leaves us voiceless on the issue of equitable access. This prioritisation of profit over community welfare has created resentment among community members, negatively affecting co-production outcomes.” **[Participant 5]**

“In most instances, civil society groups within the Mncwasa water scheme are pushing their agenda without proper consultations, acting more as gatekeepers than facilitators. This has created a disconnection between the community’s needs and advocacy efforts, reducing their effectiveness in fostering inclusive co-production.” **[Participant 2]**

“Influential individuals within the community tend to dominate our discussions with the municipality, sidelining the voices of other members. This power imbalance has limited diverse participation, leading to resolutions that do not address the needs of all community members and weakening collective ownership of water initiatives.” **[Participant 4]**

The above statement clearly shows the power dynamics between stakeholders (political leaders, municipal officials, business interests, civic groups, and community members) within the Mncwasa water scheme. By skewed decision-making towards dominant stakeholders, as noted above, such power dynamics undermine the foundation of co-production, which relies on inclusive participation and shared responsibility to ensure sustainable and equitable outcomes in potable water service delivery.

6.4 *Unclear policies and regulatory frameworks*

The study revealed that unclear policies and regulatory frameworks have led to overlapping responsibilities and tensions between stakeholders, affecting coproduction initiatives in the provision of potable water. To determine how unclear policies and regulatory frameworks have negatively affected coproduction in potable water delivery, participants were asked to describe instances where responsibilities for maintaining or managing the water scheme were unclear or contested between the municipality, traditional leaders, and other stakeholders and how this had negatively affected the delivery of potable water. Over 60% of the study participants acknowledged that overlapping roles due to unclear policies and regulatory frameworks have led to inefficiencies and delays in potable water service delivery. A participant from the municipality revealed that a lack of clarity on funding responsibility has resulted in clashes:

“There is a lack of clarity on the funding responsibilities for operations and maintenance. This lack of clarity has resulted in clashes among the water boards, the municipality and the national government, as the grants are insufficient and inconsistently allocated, leaving the municipality unable to address infrastructure failures.” **[Participant 8]**

Community members bemoaned the lack of policy clarity and regulatory frameworks as negatively affecting coproduction efforts, as conflicts between the ward councillors and the traditional leaders have frequently affected the provision of potable water. Participants revealed the following:

“I have witnessed the lack of clarity of roles between the traditional leadership and ward councillors negatively impacting collaborative efforts within the water scheme. Sometime back, we had a pipe burst in our village, and the traditional leaders insisted that community members come up with a solution, whilst he oversaw the process since the pipe ran through land under his jurisdiction. However, the ward councillor claimed that it was his responsibility to manage infrastructure within the ward. Both parties refused to budge, resulting in the members of the community being without water for close to a month, negatively affecting coproduction initiatives” **[Participant 4]**

“We have had a series of meetings where the traditional leader and ward councillor are involved in making potable water management a priority for our community. In most instances, these meetings have become power struggles instead of collaborative discussions where traditional leaders feel their inputs are ignored or dismissed by ward councillors who dominate the conversations.” **[Participant 1]**

As mentioned above, the lack of policy clarity and coherent regulatory frameworks has negatively affected coproduction initiatives in the Mncwasa water scheme, leading to confusion over roles and responsibilities among stakeholders. This was leading to inefficiencies, power struggles, and delays in decision-making, undermining the collaboration needed for effective potable water service delivery.

6.5 *Infrastructure challenges*

The study revealed that implementing coproduction initiatives in the Mncwasa water scheme continues to be hampered by infrastructure challenges. To determine if infrastructure challenges negatively impact the implementation of coproduction, participants were asked if existing infrastructure challenges have affected the implementation of coproduction initiatives in potable water delivery in the Mncwasa water scheme. All participants agreed that the implementation of coproduction initiatives for sustainable water provision is heavily affected by existing infrastructure challenges within the municipality. The participants had this to say:

“The existing infrastructure is outdated and poorly managed and maintained; for instance, within our village, it is a norm that the main pipe leaks and bursts. Recently, it took a couple of months to repair this pipe as the municipality claimed to have insufficient maintenance funds, and several households were without access to potable water. This lack of adequate water

infrastructure makes it difficult to achieve consistent water delivery even when we work with the municipality, ward councillors and traditional leaders. Co-production efforts are futile without proper infrastructure because we are always in crisis mode rather than planning for long-term solutions.” **[Participant 5]**

“A vicious cycle created by poor infrastructure, unreliable systems, and limited technical capacity undermines coproduction entirely. For example, last year, when the reservoir started leaking, our traditional leader organised a community meeting to come up with effective solutions, and he even offered to provide labour for repairs. However, ADM delayed the repairs’ commencement as they claimed to be incapacitated with skilled personnel to oversee the work. By the time the repairs commenced, much water had been lost, and community members had endured months without access to potable water. These challenges entail that coproduction will remain ineffective without addressing these systemic issues.” **[Participant 3]**

These responses from study participants prove that infrastructure challenges are a significant barrier to the successful implementation of the coproduction initiative in the provision of potable water through the Mncwasa water scheme. The findings have signalled systematic failures affecting stakeholder collaborations, undermining trust in coproduction.

7 Discussion

This study aimed to assess the barriers to the successful implementation of coproduction in potable water service delivery in the Mncwasa water scheme. The focus was on institutional challenges, infrastructure challenges, and the level of citizen engagement and participation. The study revealed that coproduction initiatives in the provision of potable water in the Mncwasa water scheme are negatively affected by citizens’ low levels of engagement and participation. This is a cause for concern as these are the people who are directly affected and who, therefore, must be at the forefront. Their contributions and experiences are valuable to co-production success. The challenge of low citizen engagement and participation in coproduction initiatives is not peculiar to Mncwasa water schemes, as it is well documented in the literature (Christensen & Lægreid, 2020; Taylor et al., 2020). The participants for this study revealed that they have lost trust in coproduction initiatives, resulting in them disengaging from participation as they feel that their participation is symbolic and tokenistic because they are made to rubber-stamp already-made decisions.

Low levels of community engagement and participation negatively impact the effectiveness of coproduction initiatives as they might fail to address community needs, leading to a mismatched intervention. Using the systems theory lens, it can be argued that low engagement of the citizens disrupts the needed relational ontology for coproduction. This article argues that with low engagement and participation, service delivery protests might be inevitable because of the lack of an ongoing dialogue between the municipality and citizens. The fading of coproduction in the 1990s was largely due to the dominance of New Public Management and its priorities, while its resurgence reflects a broader shift towards collaborative governance and digital-enabled citizen engagement.

The study also revealed that power imbalances are another challenge that has negatively affected the implementation of coproduction in potable water delivery in the Mncwasa water scheme. The study participants revealed that, in most instances, the community members are looked down upon during the meetings. Municipal officials often dominate discussions, and the business community listens because of their financial muscle, but the contribution of community members is not genuinely considered. This finding correlates with the literature where scholars argue that government departments or service providers usually hold disproportionate power (Makiva et al., 2021; Mankuebe & Manicom, 2020; Sibanda & Lues, 2021). As a result, community members perceive that their involvement is merely tokenistic or manipulated, resulting in them not engaging or participating in coproduction initiatives. Undoubtedly, the absence of a deliberate mechanism to challenge existing hierarchies renders coproduction a reinforcer of domination instead of fostering empowerment.

When citizens feel discontent that their power to influence the outcome is limited, mistrust develops towards the coproduction initiative. As a result of power imbalances in the Mncwasa water scheme, decisions are being made without considering the full perspective of stakeholders, especially citizens. This results in inappropriate decision-making that does not represent the interests of the people because insights from citizens are overlooked, affecting the coproduction of potable water. This power imbalance creates unstable partnerships within the scheme, favouring a certain group of stakeholders over citizens, traditional leaders and ward counsellors. As a result of this inequitable power distribution, citizens are withdrawing or harbouring resentment, undermining the long-term sustainability of coproduction.

Infrastructure challenges have been noted in this study as a barrier to the effective implementation of coproduction in potable water delivery in the Mncwasa water scheme. The issue of infrastructure deficiency is well documented in South African literature as it mainly affects rural areas, and the Mncwasa water scheme is not to be spared. The study participants have bemoaned obsolete and poorly managed infrastructure as major challenges affecting coproduction in potable water delivery. This finding is consistent with the literature, where scholars have argued that outdated water systems result in inefficiencies such as leaks and interruption of water service delivery (Campanale et al., 2020; Kinoshita et al., 2020). In the Mncwasa water scheme, a significant amount of water is lost daily due to leaks, which undermines the reliability of water services. This, in turn, affects coproduction initiatives negatively because members of the community have lost faith in the municipality, impeding their effective participation in coproduction initiatives (Biljohn & Lues, 2020; Kinoshita et al., 2020). It is worth noting that infrastructure deficiencies within this water scheme have posed a significant threat to coproduction because community members' participation alone cannot compensate for infrastructure challenges. The study findings are deviating from the principles of the theory underpinning the study which is the systems theory. To maintain equilibrium within a system, the theory underscores the significance of feedback loops. However, citizens' low level of engagement and participation affects these loops resulting in system malfunction. The power imbalances between municipal officials and community members as highlighted in this study are systemic issues that hinder the relational dynamics vital for effective coproduction. This theory regards hierarchies within the system as contributing to rigidity and inefficiencies.

8 Implications of the study

These findings highlight barriers to the effective implementation of coproduction for potable water services delivery in Mncwasa water scheme, with implications for municipal practice and public administration.

To ensure that coproduction yields the desired results, honest and deliberate efforts must be made within the local sphere of the government to foster the inclusion of marginalised groups in decision-making. By so doing, their perspectives are noted and they develop trust in coproduction initiatives. To achieve this, municipalities must provide resources to community members that include skills development and training programs, to enable them to fully participate in coproduction initiatives. In addition, to ensure trust and high-level engagement and participation of community members in coproduction initiatives, community members must be updated on a regular basis and transparency must be promoted. Within coproduction initiatives, clear accountability structures must be established to make sure that commitments are met and actions are taken in a responsible manner.

Embarking on a massive infrastructure development drive is key to ensure the success of coproduction in potable water delivery. Though expensive, a massive investment in both centralised and decentralised infrastructure is required to build resilient water systems. Upgrading aging networks while supporting community-based initiatives guarantees flexibility within the system. Incorporating technologies like smart monitoring and smart metering can enhance efficiency and minimise losses as a result of leaks or theft. The involvement of community members in infrastructure planning and management is key to ensuring that projects meet community needs. A financial management system should be in place to ensure that financial allocations are managed not through hierarchical structures, but by ensuring that all stakeholders have direct control over resources.

Conclusion

This study assessed the barriers to successful implementation of coproduction in potable water service delivery in the Mncwasa water scheme. Using a systems theory approach, we interviewed 12 participants, including municipal officials, community members, business community members, and political officeholders, to gain an in-depth understanding of these barriers. The study identified four main barriers negatively affecting coproduction implementation. These are low levels of community engagement and participation, power imbalances, a lack of clarity on policies and legislation, and infrastructure challenges. In addressing these challenges, this study recommends that deliberate efforts be made within the local sphere to foster the inclusion of marginalised groups in decision-making. The municipality must provide resources, including skills development and training programs, to community members to enable them to fully participate in coproduction initiatives. Massive investment in both centralised and decentralised infrastructure should be prioritised in building resilient water systems. Community members' involvement in infrastructure planning and management is key to ensuring that projects meet community needs. This study acknowledged that its major weakness is that it is embedded in a single, highly specific water governance scheme, which makes generalisation of the results very difficult.

References

- Arnstein, S. R. (1969). A ladder of citizen participation. *Journal of the American Institute of Planners*, 35(4), 216–224. <https://doi.org/10.1080/01944366908977225>
- Biljohn, M. I., & Lues, L. (2020). Doing it together: How co-production underpins the use of social innovation during service delivery. *Africa's Public Service Delivery and Performance Review*, 8(1). <https://doi.org/10.4102/apsdpr.v8i1.411>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Campanale, C., Mauro, S. G., & Sancino, A. (2020). Managing co-production and enhancing good governance principles: Insights from two case studies. *Journal of Management and Governance*, 25(1), 1–32. <https://doi.org/10.1007/s10997-020-09508-y>
- Christensen, T., & Lægreid, P. (2020). Balancing governance capacity and legitimacy: How the Norwegian government handled the COVID-19 crisis as a high performer. *Public Administration Review*, 80(5), 774–779. <https://doi.org/10.1111/puar.13241>
- Emerson, K., & Nabatchi, T. (2015). Evaluating the productivity of collaborative governance regimes: A performance matrix. *Public Performance & Management Review*, 38(4), 717–747. <https://doi.org/10.1080/15309576.2015.1031016>
- Faldi, G., Ranzato, M., & Moretto, L. (2022). Urban service co-production and technology: Nine key issues. *International Journal of Urban Sustainable Development*, 1(4), 146–161. <https://doi.org/10.1080/19463138.2022.2060237>
- Faldi, G., Rosati, F. N., Moretto, L., & Teller, J. (2019). A comprehensive framework for analyzing co-production of urban water and sanitation services in the Global South. *Water International*, 44(8), 886–918. <https://doi.org/10.1080/02508060.2019.1665967>
- Fotaki, M. (2015). Co-production under the financial crisis and austerity: A means of democratizing public services or a race to the bottom? *Journal of Management Inquiry*, 24(4), 433–438.

- Green, D. G. (2023). Emergence in complex networks of simple agents. *Journal of Economic Interaction and Coordination*, 18(3), 419–462. <https://doi.org/10.1007/s11403-023-00385-w>
- Hankerson, S. H., Moise, N., Wilson, D., Waller, B. Y., Arnold, K. T., Duarte, C., Lugo-Candelas, C., Weissman, M. M., Wainberg, M., Yehuda, R., & Shim, R. (2022). The intergenerational impact of structural racism and cumulative trauma on depression. *American Journal of Psychiatry*, 179(6), 434–440. <https://doi.org/10.1176/appi.ajp.21101000>
- Holum, M. (2022). Citizen participation: Linking government efforts, actual participation, and trust in local politicians. *International Journal of Public Administration*, 46(13), 915–925. <https://doi.org/10.1080/01900692.2022.2048667>
- Hutete, C., & Sibanda, M. M. (2022). Water service provision and social equity in a South African rural district municipality. *Africa's Public Service Delivery and Performance Review*, 10(1), a641. <https://doi.org/10.4102/apsdpr.v10i1.641>
- Ikeanyibe, O. M., Eze Ori, O., & Okoye, A. E. (2017). Governance paradigm in public administration and the dilemma of national question in Nigeria. *Cogent Social Sciences*, 3(1), 1–10. <https://doi.org/10.1080/23311886.2017.1316916>
- Jakoet-Salie, A., & Ramolobe, K. S. (2023). Necessitating the need for co-production of public services. a tool for promoting political trust in local government. *Administratio Publica*, 31(4), 23–43.
- Khine, P. K., Mi, J., & Shahid, R. (2021). A comparative analysis of co-production in public services. *Sustainability*, 13(12), 6730. <https://doi.org/10.3390/su13126730>
- Kinoshita, Y., Dollery, B., & Yamazaki, K. (2020). Creating institutional advantage: Local government co-production with community groups. *Asia Pacific Journal of Public Administration*, 42(3), 170–187. <https://doi.org/10.1080/23276665.2020.1776624>
- Kuhlengisa, I. R. (2021). An analysis of the influence of the indigent policy on the provision of potable water for rural communities in the Amathole District Municipality (Unpublished master's thesis). University of Pretoria.
- Kuhlengisa, I. R., Omoruyi, U., & Sikhosanaa, N. (2024). Examining the contribution of hybridity and co-production towards enhancing the delivery of potable water in the Eastern Cape province, South Africa. *Journal of Public Administration Studies*, 9(2), 7–17. <https://doi.org/10.21776/ub.jpas.2024.009.02.2>
- Kwakwa, V. (2024). Celebrating Water Day: Why access to clean water is vital for Africa [Accessed 26 February 2025]. <https://blogs.worldbank.org/en/africacan/celebrating-water-day-why-access-to-clean-water-is-vital-for-af>
- Laszlo, E. (1996). *The Systems View of the World: A Holistic Vision for Our Time*. Hampton Press.
- Makiva, N., Bob, T., & Davids, G. (2021). Efficacy of public participation prior to installation of portable toilets in South Africa: A case of Makhaza area in Cape Town, Western Cape Province. *African Journal of Public Affairs*, 12(1), 171–187.
- Mangai, M. S., & De Vries, M. S. (2018). Enhancing coproduction through the lens of policy development: A comparison between two developing countries. *Journal of Comparative Policy Analysis: Research and Practice*, 21(5), 427–444. <https://doi.org/10.1080/13876988.2018.1507701>

- Mankuebe, K., & Manicom, D. (2020). Public participation in public policy making: The case of the Lesotho national decentralisation policy. *Journal of Public Administration*, 5(3), 370–384.
- Matlala, L. S. (2024). Factors affecting effective citizen-based monitoring of frontline service delivery in South Africa. *Africa's Public Service Delivery & Performance Review*, 12(1). <https://doi.org/10.4102/aprd.pr.v12i1.851>
- Matloga, S. T., Mahole, E., & Nekhavhambe, M. M. (2024). Challenges of public participation in improving basic service delivery in Vhembe district municipality, Limpopo, South Africa. *Journal of Local Government Research and Innovation*, 5(0), a160. <https://doi.org/10.4102/jolgri.v5i0.160>
- Meadow, D. H. (2008). *Thinking in Systems: A Primer*. Chelsea Green Publishing.
- Mguli, K. (2022). Public-private partnerships for improved urban water infrastructure in Africa: A policy perspective (Honours assignment). University of Johannesburg.
- Morse, J. M. (2015). Analytic strategies and sample size. *Qualitative Health Research*, 25(10), 1317–1318. <https://doi.org/10.1177/1049732315602867>
- Moser, A., & Korstjens, I. (2018). Series: Practical guidance to qualitative research. part 3: Sampling, data collection and analysis. *European Journal of General Practice*, 24(1), 9–18. <https://doi.org/10.1080/13814788.2017.1375091>
- Nabatchi, T., Sancino, A., & Sicilia, M. (2017). Varieties of participation in public services: The who, when, and what of coproduction. *Public Administration Review*, 77(5), 766–776. <https://doi.org/10.1111/puar.12765>
- Nyama, V., & Mukwada, G. (2023). Factors affecting citizen participation in local development planning in Murewa district, Zimbabwe. *Journal of Asian and African Studies*, 58(3), 421–437. <https://doi.org/10.1177/00219096211069643>
- Ostrom, E. (1996). Crossing the great divide: Coproduction, synergy, and development. *World Development*, 24(6), 1073–1087. [https://doi.org/10.1016/0305-750x\(96\)00023-x](https://doi.org/10.1016/0305-750x(96)00023-x)
- Rosati, F. N., Moretto, L., & Teller, J. (2020). An incremental approach to service co-production: Unfolding the co-evolution of the built environment and water and sanitation infrastructures. *International Journal of Urban Sustainable Development*, 14(1), 162–179. <https://doi.org/10.1080/19463138.2020.1818085>
- Selepe, M. (2023). The role of community participation in support of the successful implementation of the integrated development planning in South Africa. *International Journal of Social Science Research and Review*, 6(6), 343–353. <https://doi.org/10.47814/ijssrr.v6i6.1371>
- Sibanda, M. M., & Lues, L. (2021). Public participation power dynamics in strategic development planning in a metropolitan municipality: Eastern Cape province. *Journal of Local Government Research and Innovation*, 2. <https://doi.org/10.4102/jolgri.v2i0.44>
- Stats SA (2022). Non-financial census of municipalities for the year ended 30 June 2020 [Government Printers. Retrieved 19 May 2026]. <https://www.statssa.gov.za/publications/P9115/P91152020.pdf>

- Steyn, D. (2024). Villagers work with Eastern Cape municipality to fix water supply: The Mncwasa Water Scheme has been revived [Accessed on 5 May 2025]. <https://groundup.org.za/article/villagers-work-with-eastern-cape-municipality-to-fix-water-supply/>
- Taylor, J. D., Draai, E., & Jakoet-Salie, A. (2020). Creating a virtuous cycle for increased trust in local government. *The Journal for Transdisciplinary Research in Southern Africa*, 16(1). <https://doi.org/10.4102/td.v16i1.731>
- United Nations (2017). UN World Water Development Report [Accessed 19 May 2026]. <https://www.unwater.org/publications/un-world-water-development-report-2017>
- United Nations (2025). Water Facts [Accessed 19 May 2026]. https://www.unwater.org/sites/default/files/2025-01/UN-Water_Water_Facts_one_pager_January_2025.pdf
- Vasileiou, K., Barnett, J., Thorpe, S., & Young, T. (2018). Characterising and justifying sample size sufficiency in interview-based studies: Systematic analysis of qualitative health research over a 15-year period. *BMC Medical Research Methodology*, 18(1), 148–166. <https://doi.org/10.1186/s12874-018-0594-7>
- Vyas-Doorgapersad, S. (2023). Investigating the use of PPPs for upgraded urban water infrastructure. *International Journal of Research in Business and Social Science (2147- 4478)*, 12(3), 452–460. <https://doi.org/10.20525/ijrbs.v12i3.2476>
- Wellmanns, A., & Schmiemann, P. (2020). Feedback loop reasoning in physiological contexts. *Journal of Biological Education*, 56(4), 465–485. <https://doi.org/10.1080/00219266.2020.1858929>
- World Health Organisation (2017). *Guidelines for Drinking-Water Quality (4th Edition, Incorporating the 1st Addendum)* [Accessed 19 May 2026]. <https://www.who.int/publications/i/item/9789241549950>
- Zwane, Z., & Matsiliza, N. S. (2022). Stakeholders' involvement in service delivery at eDumbe municipality. *Journal of Local Government Research and Innovation*, 3, 45. <https://doi.org/10.4102/jolgri.v3i0.45>