THE GLOBAL ENGINEERING CONFERENCE ON SUSTAINABLE DEVELOPMENT AND WORLD FEDERATION OF ENGINEERING ORGANISATIONS EXECUTIVE COMMITTEE MEETINGS.

15th - 18th October 2024, Kigali, Rwanda

Theme: Engineering Innovations for a Sustainable Future

@RwandaEngineers | www.engineersrwanda.rw | geco.ier.rw

Platinum Sponsor dar

Ministry of Infrastructure

Under the patronage of unesco

World Federation of Engineering Organizations
Fédération Mondiale des Organisations d'Ingénieurs

FAEO

THE GLOBAL ENGINEERING CONFERENCE ON SUSTAINABLE DEVELOPMENT AND WORLD FEDERATION OF ENGINEERING ORGANISATIONS EXECUTIVE COMMITTEE MEETINGS.

15th - 18th October 2024, Kigali, Rwanda

An assessment of the effects of land reform on access to clean water and sanitation in Zimbabwe

@RwandaEngineers www.engineersrwanda.rw geco.ier.rw

THE GLOBAL ENGINEERING CONFERENCE ON SUSTAINABLE DEVELOPMENT AND WORLD FEDERATION OF ENGINEERING ORGANISATIONS EXECUTIVE COMMITTEE MEETINGS.

15th - 18th October 2024, Kigali, Rwanda

Dr. Eng Tafadzwa Mudondo[1] and Tobias T Shumba[2]

1. Principal, Harare Polytechnic t1mudondo@gmail.com, and

2. Research Chemist (Lecturer), Harare Polytechnic tshumba@hrepoly.ac.zw

INTRODUCTION

- The colonial occupation of Zimbabwe by the white settlers in 1890, resulted in the colonizers allocating themselves prime and productive land, leaving black people with dry and unproductive land.
- The fast-track land reform of the year 2000 in Zimbabwe corrected this anormaly though there were significant negative impacts on access to clean water and sanitation.
- The reform coincided with changes in water infrastructure ownership, leading to the loss of investments in dams.
- Despite efforts to improve access to water sources, challenges persist in urban and rural areas, with a substantial lack of safe water and sanitation facilities.

INTRODUCTION CONT'D

- Implementing Integrated Water Resources Management (IWRM) principles has been hindered by a struggling agriculture sector due to the El Nino effect post-year 2000 and other related climatic changes that affect irrigation water usage and sector financing.
- Additionally, tensions between water as a social good versus economic good highlight the complexities in managing water resources effectively because of droughts, emphasizing the need for resilient and sustainable water and sanitation infrastructure development.
- Addressing these challenges requires a holistic approach considering the interplay between land reforms, water management, climate change, and sustainable development in Zimbabwe.

METHODOLOGY

- A desktop review, also referred to as a literature review or secondary data analysis was used in this research.
- It typically involves analyzing existing data and literature, without collecting new data through fieldwork or experiments.
- This approach is commonly used in academic research, policy analysis, and program evaluation to summarize existing knowledge, identify research gaps, and inform future research studies.

EFFECTS OF THE LAND REFORM ON WATER RESOURCES AND SANITATION

- The land reform policies implemented in Zimbabwe in the early 2000s significantly impacted access to clean water and sanitation in the country.
- The redistribution of large commercial farms to smallholder farmers disrupted existing water infrastructure and led to a breakdown in the provision of clean water and sanitation services, particularly in rural areas (Scoones et al., 2010).
- Many new farmers lacked the resources and technical expertise to maintain and expand water and sanitation systems, leading to a decline in the quality and coverage of these services (Nhapi, 2009).
- This contributed to increased incidence of waterborne diseases and further marginalized vulnerable populations, undermining progress towards the United Nations Sustainable Development Goals for water and sanitation (Manzungu et al., 2016).

THE INTERVENTIONS BY THE ZIMBABWEAN GOVERNMENT

1. Rehabilitation of Water Infrastructure
2. Integrated Water Resource Management (IWRM)
3. Community Engagement Programs
4. Capacity Building and Training
5. Collaboration with NGOs

CHALLENGES

1. Deteriorating Infrastructure
2. Limited Financial Resources
3. Skills Gap
4. Climate Change
5. Coordination with NGOs
6. Monitoring and Evaluation

RESULTS AND DISCUSSION

- One notable outcome has been the rehabilitation of water infrastructure, which has improved access to clean water for some rural communities.
- Projects focused on upgrading dams and irrigation systems have led to increased agricultural productivity in several areas, allowing farmers to utilize irrigation more effectively (Zhou, 2020).
- However, notwithstanding these improvements, many communities still face significant challenges due to the lingering effects of the chaos that characterized the land reform process.
- In particular, the rapid population influx into newly resettled areas has strained existing water and sanitation facilities, leading to overburdened systems and inadequate service delivery (Moyo, 2018).
- Moreover, the integrated water resource management approach, which emphasizes sustainable practices, has seen varied implementation across regions, often hampered by a lack of consistent funding and governance structures (Chenje et al., 2018)

RESULTS AND DISCUSSION

- The government has also launched public awareness campaigns aimed at promoting hygiene and sanitation practices, which have contributed to improved community health outcomes in certain districts.
- The widespread issues such as inadequate sanitation facilities and waterborne diseases persist, primarily due to ongoing economic challenges and infrastructure deficits (Makarau, 2020).
- While there have been encouraging developments in some areas, the overall impact of government interventions has been constrained by systemic challenges, emphasizing the need for a multifaceted approach that addresses both infrastructural and social dimensions of water and sanitation management in Zimbabwe.

CONCLUSION

- The government's interventions in water and sanitation post-land reform have achieved some progress, but challenges remain, particularly regarding infrastructure strain and community engagement.
- Rapid population growth in resettled areas has outpaced enhancements in water and sanitation facilities, highlighting systemic weaknesses.
- To address these issues, it is crucial to prioritize investment in rehabilitating and expanding water infrastructure while ensuring that solutions are sustainable and adaptable.
- Strengthening community capacity through comprehensive training programs for local water user

THE GLOBAL ENGINEERING CONFERENCE ON SUSTAINABLE DEVELOPMENT AND WORLD FEDERATION OF ENGINEERING ORGANISATIONS EXECUTIVE COMMITTEE MEETINGS.

15th - 18th October 2024, Kigali, Rwanda

THANK YOU / MURAKOZE

@RwandaEngineers • (+250) 789 904 228

gecokigali2024@engineersrwanda.rw • www.engineersrwanda.rw

Platinum Sponsor dar

@RwandaEngineers | www.engineersrwanda.rw | geco.ier.rw

Ministry of Infrastructure

Under the patronage of unesco

World Federation of Engineering Organizations
Fédération Mondiale des Organisations d'Ingénieurs

FAEO