

43rd WEDC International Conference

ONLINE: 9 – 13 September, 2024

WATER AND CLIMATE RESILIENCE

**Collaborative water management for sustainable impact:
A comprehensive study of experiences in the
Maasai community, Tanzania**

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REFERENCE NO. 3468

Introduction

This study explores the water management challenges faced by the Maasai Community, initially addressed through a budget allocation for rehabilitating multiple water points. The transformative impact of collaboration among E-MAC Tanzania, Moiva, KIranya, Tarakwa, Ilkiding'a, Sambasha and Oltroto water committees (MOKITAISO), Rural water Supply and Sanitation Agency (RUWASA), and the local communities takes centre stage, emphasising adaptive decision making and sustainable practices. The collaborative decision-making processes, unveiled during a linking and learning session, become a focal point, emphasising the importance of assessing actual community needs and local solutions that can be scaled up. The study explores the detailed rehabilitation process, spotlighting the successful case of the Metamei water source, its technical upgrades, and ongoing efforts for Nabaye B shaped by community feedback. Stakeholder contributions, where E-MAC Tanzania, MOKITAISO, and RUWASA synergize their efforts, showcase a holistic approach to water management sustainability. Community engagement emerges as pivotal, addressing conflicts through ongoing discussions led by MOKITAISO, RUWASA, and village leaders, aligning with community needs for both domestic and agricultural purposes. This study captures a collaborative model's success, highlighting its transformative impact on adaptive decision making and community focused sustainable water management.

The study in the Maasai Community, Arusha District, Tanzania, aims to:

- Evaluate the collaborative decision-making processes.
- Assess rehabilitation processes and technical interventions.
- Examine stakeholder contributions and synergies.
- Investigate community engagement and conflict resolution.
- Extract lessons learned and transformative impacts.
- Provide recommendations for future initiatives.

Methodology

This study employs a mixed-methods approach, combining qualitative and quantitative strategies to investigate collaborative water management in the Masai Community, Arusha District, Tanzania.

Conducting semi-structured interviews and focus group discussions with stakeholders and community members to explore decision-making processes, contributions, and perceptions. Administering surveys to gather quantitative data on the perceived effectiveness of rehabilitation efforts, water access, and community satisfaction. Analysing survey responses using statistical tools. Reviewing project documents, reports, and collaboration agreements to trace the evolution of collaborative initiatives. Analysing relevant policies and budgets supporting water management. Conducting site visits to rehabilitated water points for

firsthand observations. Engaging in participatory observations during community meetings and collaborative sessions. Integrating qualitative and quantitative data through triangulation to enhance the study's robustness. Applying thematic analysis to identify recurring themes.

Discussion

The collaborative decision-making process witnessed during the linking and learning session has been a catalyst for positive project outcomes in the Masai Community's water management initiatives. The intentional shift from rehabilitating multiple water points to focusing on Metamei and Nabaye B reflects a community centric approach, emphasizing the adaptability of the collaborative model. The synchronized efforts of E-MAC Tanzania, MOKITAISO, and RUWASA contribute distinct yet complementary roles, ensuring a holistic and successful project. Community engagement, particularly addressing concerns related to the pipe size (supplying water to the community) at Metamei, highlights the commitment to resolving conflicts while meeting the diverse water needs of the community (home uses and horticulture). The transformative impact of adaptive decision-making, informed by thorough needs analysis, is evident in the community's shift toward water meter installation, showcasing the importance of data-driven approaches for long-term sustainability. The collaborative water management model not only ensures project success in the Maasai Community but also serves as a replicable framework with implications for broader regions. The emphasis on collaboration, adaptability, and community engagement provides valuable insights for stakeholders involved in similar water management initiatives.

Conclusion

Collaborative water management study in the Maasai Community, Arusha District, Tanzania, demonstrates the transformative power of unified efforts. The collaboration between E-MAC Tanzania, MOKITAISO, and RUWASA not only addresses immediate water challenges but sets a precedent for adaptive decision making and sustainable practices. Stakeholders' contributions, encompassing rehabilitation, meter installation, and community engagement, create a holistic approach ensuring long-term effectiveness. The ongoing efforts, particularly in addressing community concerns, exemplify the importance of adaptability and harmonious collaboration. The study yields valuable lessons, emphasizing the need for thorough analyses, stakeholder involvement, and adaptive strategies in shaping future water management initiatives. The collaborative model proves to be a promising blueprint for achieving sustainable water solutions, fostering positive community relationships, and serving as a guide for effective practices in similar contexts.

Recommendations

For future research and practical applications, it is recommended to extend collaborative water management models to diverse communities, considering variations in geographic, demographic, and socio-economic factors. Exploring the scalability of this model and its adaptability to different contexts would contribute to its broader applicability. Additionally, further research could explore refining the collaborative decision-making processes, incorporating more stakeholders or adapting the model to address specific challenges in varying contexts.

Lessons learned

This study has yielded valuable lessons that show the importance of community-centred approaches in water management. The adaptive decision-making process, informed by community feedback, emphasizes the need for ongoing engagement and responsiveness to evolving needs. The success of the collaborative model highlights the effectiveness of combining diverse stakeholders' contributions and the importance of addressing conflicts promptly to maintain positive community relationships.

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