

MAINTENANCE MANAGEMENT SYSTEM FOR IMPROVING RURAL WATER SUPPLY SCHEME IN TANZANIA: A Case Study of Kipaduka V village in Iringa Region.

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ABSTRACT

The Kipaduka rural water supply scheme located in Iringa region in Southern Tanzania is operated and maintained by the community. It has been noted that maintenance of Kipaduka rural water supply scheme remain a significantly problem. The water services of kipaduka water supply scheme is not reliable due to frequent failure. The aim of this research was to develop maintenance management system that will improve the maintenance practices of Kipaduka water supply scheme.

A mixed method research approach was adopted whereby both quantitative and qualitative methods were employed in the field data collection and analysis so as to enhance reliability and validity of the results. Potential stages followed, included reviewing related literatures, defining problem, deciding on sample siz, and designing and testing of survey questionnaires for primary data collection. The sample size constituted 40 respondents responsible for maintenance of Kipaduka water supply scheme. The research employed purposive sampling technique to select questionnaire respondents. Secondary data was obtained through a detailed literature review. Data was analyzed by using SPSS 20.0.

The results showed that the Kipaduka water supply maintenance practice do not have a well–defined and documented water maintenance policy. Run to failures was found to be the maintenance strategy adopted by the community. Also it was revealed that both reporting and instructions of maintenance activities are done verbally which means that there are no record kept. Availability of maintenance spare parts indicated that less than 70% obtained within the region and the rest about 30% obtained fro Dar es Salaam. It was revealed that the budget of Kipaduka water supply scheme depends entirely of water users tariff, however the tariff collection do not meet the targeted amount.

The system have been developed in this research which includes all parameters; these are maintenance policy, Preventive maintenance strategy, work order system, maintenance spare part control system and maintenance budget control component. It is also includes the tracking tools, asset register and default regiter.

The developed system should anable the management to document all maintenance policy, strategic plans, maintenance history, control maintenance budget and spare parts control. Further more should be used for tracking maintenance activities, manpower, assets and spare parts inventories. Also shall maximize mean time between failures(MTBF) and minimize mean time to repair (MTTR); that results in improving availability, reliability and minimizing maintenance cost of the Kipaduka water supply scheme.

The study concluded that the developed maintenance management system will impacts positively on the maintenance practices of Kipaduka water supply scheme if efficiently implemented.

Recommended the Kipaduka water supply community management need to formulate and document their maintenance policies, strategic maintenance plan for effective and efficient management of maintenance work. Also, preventive maintenance should be adopted. Lastly Computerized Maintenance System is recommended.

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