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**FEASIBILITY OF ROOF CATCHMENT RAINWATER
HARVESTING FOR DOMESTIC USE IN EAST KARACHUONYO
DIVISION, RACHUONYO DISTRICT, KENYA**

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ABSTRACT

This study examined the feasibility of roof catchment rainwater harvesting (RCWH) for domestic water supply in East Karachuonyo Division, in Rachuonyo District, Kenya. The overall objective of the study was to evaluate the use of roof catchment rainwater harvesting in the division and assess the feasibility of its use as a main source of domestic water. The specific objectives were to: investigate available potential for rainwater harvesting, investigate the acceptability of rainwater harvesting, and evaluate the suitability of existing roof sizes and storage capacities to rainwater harvesting. The theoretical framework was provided by the planning approaches of basic needs and appropriate technology. The study utilised both secondary and primary data. The primary data was collected using questionnaire interviews, measurements, observations and photography to capture features relevant to the study. Secondary data was obtained from GoK publications, MWI records, and LBDA records. Analysis of data was both qualitative and quantitative. Qualitative attributes were analysed by examining their frequencies, while quantitative attributes were analysed by using measures of central tendency and dispersion to describe their distributions. The results were presented using histograms, pie charts, bar graphs and line graphs. The study established that there exists potential for rainwater harvesting using roofs that is currently underutilised. The rains in the division can sustain RCWH yet only 23.2 % of the suitable roof surfaces are being utilised. It was also noted that although water harvested using roofs is highly valued by the majority of the household heads, there are constraints to adequate water harvesting, most common being lack of financial resources which resulted in inadequate storage and/or guttering. It was found that ideal rainwater storage capacities are attainable but catchment surfaces need to be increased for household sizes greater than four to satisfy water demand using minimum storage possible. The study concluded that it is feasible to meet domestic water needs from roof catchment rainwater harvesting.