

AN INVESTIGATION ON DECLINING WATER LEVELS OF RIVER MUTONGA IN THARAKA NITHI COUNTY, KENYA

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ABSTRACT

Variations in river water volumes have direct or indirect effects on biodiversity because sustainable development is highly dependent on availability of adequate water. Global records show declining water levels in most rivers. Most rivers flowing through TharakaNithi County have recorded notable decline in water volumes and this is a major challenge to achieving sustainable development in the County. Knowledge about water volume variations and factors responsible for the variations is key to effective water resource management. This study aimed at establishing extent of water volume decline in river Mutonga, the impact of human water abstraction and effects of climate change on the declining water volumes over the last 30 years. The study adopted a descriptive survey research design. The study corrected primary and secondary data from 270 households' heads, three regional NEMA officials and three regional water resources authority officials. Data was analyzed using descriptive and inferential statistics. A long-term variation in the recorded rainfall in the region in the period between 1990 and 2020 and was associated with the decline in river volume. There was a significant relationship between increased temperatures and river discharge amount ($0.639816 > 0.05$). The R square value of 0.8597, shows a significant relationship between the number of intakes constructed to abstract water and the river discharge. It is advisable for County Governments to adapt suitable water management strategies during implementation of development projects that are likely to affect water resources.

Keywords: *Declining Water Level, biodiversity, Sustainable Development, Human Water Abstraction*