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**ADAPTABLE IMPROVED ONSITE WASTEWATER TREATMENT
SYSTEMS FOR URBAN SETTLEMENTS IN DEVELOPING COUNTRIES**

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ABSTRACT

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Onsite sanitation is widely adopted in developing countries. Septic tanks being one of the onsite treatment systems is still adopted and scaled up especially in urban settlements. But, experience shows that septic tanks are designed without due considerations of the site and environmental conditions as a result public health risks are imposed and higher operating costs are incurred. A study was conducted in two selected informal settlements in Dar es Salaam Tanzania to understand the practice, status and implication for the existing septic tanks. Results indicate that most of the systems are improperly designed and installed as a result they are equipped with low performance efficiency and a number of operational challenges. The main reported operational challenge is frequent desulding that has impacts on both the public health and economy. In addition, level of awareness and low priority on sanitation were identified to be among the factors affecting sanitation. In this article, options under which the situation would be improved are considered and discussed. Apart from proper designs, modifications of the septic tanks with consideration of the environmental conditions is considered to achieve better results than the conventional septic tank systems. Capacity building of local masons in the design and installation of septic tank systems; awareness sensitization to the public; and review of policy and guidelines to incorporate tailored designs are among the recommendations.

Keywords: Septic tank, Onsite sanitation, Tailored designs, Informal settlements, Developing countries