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Wastewater management in Ethiopian higher learning institutions: functionality, sustainability and policy context

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Abstract

This study investigates the existing wastewater management situation in Ethiopia, with particular emphasis on university campus wastewater. The investigation was carried out by reviewing literature, reports, policy documents and field visits integrated with laboratory assessment. It was established that from the seven universities only two have functional wastewater treatment plants, but none of them meet effluent standards. These *mainly centrally prescribed systems* lack sustainability because of problems related to technology choice, affordability and technical skills. This paper proposes feasible rehabilitation strategies for the existing wastewater systems.

A combination of policy instruments and integrated wastewater management strategies are proposed. Although based on specific data from Ethiopia, the findings and recommendations of this study also apply to other, similar, low-income countries where the population is booming but overall wastewater management planning is lagging behind.

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Wastewater management in Ethiopian higher learning institutions: functionality, sustainability and policy context

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This study investigates the existing wastewater management situation in Ethiopia, with particular emphasis on university campus wastewater. The investigation was carried out by reviewing literature, reports, policy documents and field visits integrated with laboratory assessment. It was established that from the seven universities only two have functional wastewater treatment plants, but none of them meet effluent standards. These *mainly centrally prescribed systems* lack sustainability because of problems related to technology choice, affordability and technical skills. This paper proposes feasible rehabilitation strategies for the existing wastewater systems. A combination of policy instruments and integrated wastewater management strategies are proposed. Although based on specific data from Ethiopia, the findings and recommendations of this study also apply to other, similar, low-income countries where the population is booming but overall wastewater management planning is lagging behind.

Keywords: university wastewater; waste stabilisation ponds; environmental policy; wastewater management; sustainability

1. Introduction

The problems related to water and sanitation in low-income countries emanate from rapid, unplanned urbanisation and population explosion. The uncontrolled growth accelerated by migration to urban centres on the one hand and lack of knowledge on the other has made planning and expansion of water and sewerage systems difficult and in some cases non-existent. Furthermore, many governments in these low-income countries assume that they have more pressing needs than wastewater management, such as dealing with war and conflicts and with food security issues. Wastewater management is often low on the list of priorities (Von Sperling and Augusto de Lemos Cherincharo 2002, Massoud *et al.* 2009). The discharge of untreated sewage into water bodies and into the environment is a common practice, leading to health and economic risks, environmental degradation and disruption of ecological integrity. As indicated by Van der Bruggen *et al.* (2009), the fact that

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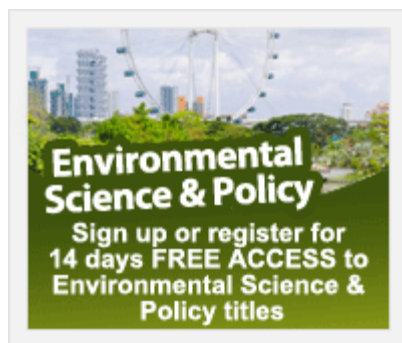


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