

WETLAND TREATMENT OF WASTE WATER: FACTORS AFFECTING THEIR PERFORMANCE

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Botswana is a semi – arid country with limited water resources. Added to the decline in water resources, the country is also prone to persistent droughts that decrease the availability of water for domestic and other uses. It is therefore important that measures are put in place to ensure that water resources are used in a sustainable manner with little or no wastage. The August 2001 edition of the Botswana Policy for Wastewater and Sanitation Management states that wastewater should be seen as a potential resource whose use should be maximized rather than as a waste product that should be ‘disposed of’. For years, wetlands have been known to help to protect water quality by recycling the essential elements of life (carbon, hydrogen, oxygen, nitrogen and phosphorus) as well as the metallic micronutrients.

This paper evaluates the performance of 2 different constructed wetlands that have been built as pilot systems in different parts of Botswana. These wetlands treat wastewater mainly from domestic sources. The original designs of these wetlands provided for the re-use of the treated effluent for irrigation of trees and landscaping. In spite of the well-documented advantages contained in the literature on wastewater treatment using wetlands, it has, however, been observed that in the majority of installations in the country, the technology is not performing according to expectations. Thus, the benefits from the investments have not been realized because the treated effluent for reuse is not readily available.