POLLUTING WATER WITH A VERITABLE SOURCE OF ENERGY: THE SITUATION IN THE URBAN CITY OF LAGOS-NIGERIA

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Introduction and Objectives

Lagos is the commercial nerve centre of Nigeria experiencing rapid urbanisation. It is one of the mega cities of the world with an estimated population of 17.5 million. The Lagos Lagoon which is a notable water body in Lagos state has been a sewage disposal site for the past fifty years and the quantity of sewage wastes disposed daily into the Lagoon has greatly increased due to rapid population growth. The Lagoon serves as the major source of sea foods in Lagos and also confers beauty to the city. Like some other highly populated and sewage rich cities, Lagos state is yet to utilise her abundant sewage resources in meeting her energy need instead of polluting her Lagoon. The aim of this paper is to elucidate the effects of disposing sewage waste into the Lagos Lagoon and the potential of the state generated sewage waste in meeting her formidable energy challenge.

Methodology and Approaches

Water samples from ten different locations of the Lagos Lagoon were analysed for the presence of pathogenic organisms using Sedimentation, Microscopy and Culture techniques. The Biochemical Oxygen Demand (BOD) and pH of the water samples were tested with the aid of BOD test apparatus and pH meter respectively. The daily average numbers of sewage tankers offloaded in all the sewage disposal sites were recorded and the average daily volume of sewage wastes disposed calculated.

Analysis, Results, Conclusions and Recommendation

The Analysis revealed the presence of pathogenic organisms like Ascaris lumbricoides, Giardia intestinalis, Hookworms, Escherichia coli, Salmonella species and Klebsiella species which. Also, a BOD level of 95-225mg/l at 20°C for five days and a pH of 7.9-8.5 were recorded. This study revealed that an average of 600,000 litres of sewage wastes are disposed daily disposed by tankers in Lagos of which 50% goes into the Lagos Lagoon directly or indirectly.

This study revealed that dumping sewage wastes into the Lagos Lagoon makes the water ecologically unfit for aquatic faunas and floras and also reduce the aesthetic appearance of the environment. It also exposes those that come in contact with it to pathogenic infections. Previous Studies have shown that 1kg of dry faecal sludge has a calorific value of 17.3 MJ, this implies that the daily 600,000 litres of Faecal sludge disposed in Lagos can meet the state’s energy demand.

The Productive use of Faecal Sludge is strongly recommended to sanitise the Lagos Lagoon and meet the energy demand of the state.

Keywords: Energy, Lagoon, Sewage, Sewage Water, Water

Topic: Environmental water, and water resources