**23. Harmful algal bloom and associated health risks among users of Lake Victoria freshwater: Ukerewe Island, Tanzania(Little GIS & RS used)**

Abstract:

There is a global concern regarding the occurrences of harmful algal blooms (HABs) and their effects on human health. Lake Victoria (LV) has been reported to face eutrophication challenges, resulting in an increase of bloom-forming cyanobacteria. This study is aimed at understanding the association of HABs and health risks at Ukerewe Island. Water usage indicates that 31% use lake water, 53% well water and 16% treated supplied pipe water.

Visible blooms in lake water were associated with GI, skin irritation and vomiting as compared to water without visible blooms. The concentration of cyanobacteria blooms poses greater risks when water is used without treatment.

Objectives

1. This study is aimed at understanding the association of HABs and health risks at Ukerewe Island.

Introduction

Lake Victoria (LV), being a fresh water lake, has faced eutrophication challenges, resulting in an increase of bloom forming cyanobacteria throughout the year with the ability to produce hazardous cyanotoxins (Mbonde bet al.).

HABs can be visible as excessive scum of algal biomass on top of fresh water, which may be attributed to an increase in the levels of nitrogen and phosphorus in fresh water bodies, and this has been observed in Lake Victoria

This increase in algal biomass causes low oxygen levels in the water which leads to the mortality of aquatic organisms, as well as reducing the quality of water for human consumption.

**22. Challenges in tracking harmful algal blooms: A synthesis of evidence from Lake Erie**

Abstract & Intro

HABs are becoming increasingly common in freshwater ecosystems globally, raising complex questions about the factors that influence their initiation and growth. These questions have increasingly been answered through mechanistic and stochastic modeling efforts that rely on historical information about HABs in a given system for development, validation, and calibration. Therefore, understanding processes that control HABs is predicated on the ability to answer much more basic questions about: -

* What has actually occurred in a given system,
* Extent,
* Intensity of the previous blooms, and
* Timing of the bloom

Reports on HABs in Lake Victoria in Africa (e.g., Sitoki et al., 2012), depicts an alarming trend in freshwater ecosystem that is only expected to impair the water quality under this changing climate (Paerl and Huisman, 2009).

The effects of HABs are well documented:

* They are associated with acute morbidity and mortality across a range of biota (including humans) (Landsberg, 2002; Van Dolah, 2005),
* Economic impacts through ecological and human health costs (Anderson et al., 2000; Hoagland et al., 2002)

Thus, the critical need for additional water treatment measures for regions relying on surface water supplies.

Nuisance, among other negative impacts provide an acute reminder of the impacts of HABs and the urgency of addressing their proliferation. The need for scientifically-guided policy to mitigate these impacts has never been greater.