

Spatial distribution of nutrients and risk of eutrophication of Lake Tengrela in the municipality of Banfora in Burkina Faso.

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Abstract

The study characterises the spatial distribution of a selection of nutrients from the literature review. A relationship is also established between the selected nutrients and chlorophyll a, which is characteristic of the trophic level of a water body. We used data from water withdrawals during the high and low water seasons, linked to specific coordinates, but also surveys of 36 producers around the shores of the lake. Our results show different levels of nutrients in the water body, modelled according to the lake's right of way. The spatial distribution of aquatic species is also disparate, as they are strongly correlated with these nutrients, and the distribution of nutrients in the water body depends on seasonality and parameters and the presence of macrophytes according to the presence of nutrients. As for the farmers, 100% of them use chemical fertilisers and organic manure in their production. These practices increase the presence of nutrients in the water body. Our results confirm the fact that the spatial analysis of the distribution of nutrients in the water body is, on the one hand, strongly linked to the agricultural activities around the shores of the lake and that they have an impact on the health of the lake. This analysis will make it possible to understand and know the most influential and problematic nutrient for the proper management of this water body.

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