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SPACIO-TEMPORAL DYNAMIC OF THE VEGETATION AND DEGRADATION FACTORS OF THE VEGETATION COVER AROUND LAGDO LAKE, NORTH CAMEROON

Abdouraman^{12*}, Tchobsala¹, Megueni Clautilde², Boubakary Simon³

¹University of Maroua, Faculty of Sciences, Department of Biological Sciences, P.O. Box 814 Maroua, Cameroon;

²University of Ngaoundéré, Faculty of Sciences, Laboratory of Biodiversity of Sustainable Development,
P.O. Box 454 Ngaoundéré, Cameroon;

³MEADEN P.O. Box 17 Garoua, Cameroon;

*Corresponding Author Abdouraman, e-mail: abdouramanibnaouf167@gmail.com;

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ABSTRACT

Lagdo lake with an area of 586 km² is a dam lake located in the North Region of Cameroon. It is under the influence of silting and siltation. These phenomena are becoming more and more widespread to the point where the hydroelectric dam is now threatened for the production of electrical energy. The objective of this study is to map the dynamics of land use between 1973, 2000 and 2020 and to determine the factors that affect the vegetation cover around Lagdo Lake. The methodology adopted consisted of identifying land cover units and determining the factors that are responsible for land cover degradation. Landsat images from 1973, 2000 and 2020 and survey data from 416 farmers in the area were used. The results show that the study area has undergone an advanced spatial and temporal change over the period 1973-2020. This change reveals that the average annual regression rates for vegetation formations are -3.21% and respectively -0.88% and -2.33% for tree and shrub savannahs. On the other hand, an increase was observed in anthropogenic formations such as mosaics of bare soil and farms (43.41%), and buildings (0.52%). From 1973 to 2020, anthropogenic formations (buildings and mosaics of bare soil and farms) have progressed to the detriment of natural formations (shrubby savannahs and tree savannahs). These natural formation paned from -37040.5 ha between 1973-2000 to -439284.5 ha between 2000-2020 to the benefit of built-up areas and mosaics of bare soil and farms. The mutation of this vegetation is due to anthropic pressures linked to agricultural activities (20±11.24%), fishing (9.5±3.29%), pastoral activities (8.65±9.51%), vegetation slash and burn (17±8.8%), poorly controlled urbanisation (5.1±5.78%) and demographic pressure (17±8.23%). However, agriculture remains the main factor for the degradation of vegetation cover. Considering the accelerated rate of the degradation of the vegetation cover of the said lake, the energy production of the Lagdo dam would cease in the future years.

Key words: Vegetation dynamic, lake silting, Lagdo, North Cameroon.