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Strengthening mangroves conservation and enhancing their resilience: The contribution of the co-management approach

SETONDE CONSTANT GNANSOUNOU

University of Namur, Department of Geography, Belgium

Abstract

Literature on conservation science has documented the increasing use of the co-management approach to effectively conserve natural resources. Although some studies found the co-management approach as highly effective, others also reported some uncertainties associated with the use of this conservation approach. Using the mono transboundary biosphere reserve (MTBR) as a case study, this work assessed the effectiveness of the co-management approach for mangrove conservation in West Africa. Data was collected in two protected sites of the reserve (one in Togo and the other in Benin). Exploratory sequential mixed method via in-depth interviews ($n = 17$), focus group discussions ($n = 14$), household surveys ($n = 274$) and expert-based surveys ($n = 10$) were carried out, and data was analysed using the InVEST-based habitat risk assessment (HRA) model, chi-square tests and simple probability of likelihood. Findings showed that the co-management approach has lowered anthropogenic stressors to mangroves in the reserve. Under the co-management approach, all the mangroves located in the Benin side of the reserve are identified as under low risk whereas 42 % of the mangrove cover are considered under low risk and 58 % under medium risk in Togo. Local perception also portrayed the reduction of mangrove degradation in the study sites following the adoption of the co-management approach in the two countries. However, there are some challenges such as the financial support provision and regular community engagement which need to be thoroughly researched and addressed to achieve the sustainability of the positive impacts of the co-management in the MTBR. The study concluded that the co-management approach presents a good avenue to foster the resilience of socioecological systems, particularly mangrove ecosystems worldwide.

Keywords: Ecosystem services, mangroves, resilience, socioecological systems, West Africa