

## **Mangroves in the Douala Area, Cameroon: The Challenges of Open Access Resources for Forest Governance**

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**Abstract :** The project focuses on analyzing the spatial and temporal evolution of mangrove forest ecosystems near the city of Douala, Cameroon, in response to increasing human and environmental pressures. The selected study area, located in the Wouri River estuary, has a unique combination of economic importance, and ecological prominence. The study included valuable insights by conducting semi-structured interviews with resource operators and local officials. The thorough analysis of socio-economic data, farmer surveys, and satellite-derived information was carried out utilizing quantitative approaches in Excel and SPSS. Simultaneously, qualitative data was subjected to rigorous classification and correlation with other sources. The use of ArcGIS and CorelDraw facilitated the visual representation of the gradual changes seen in various land cover classifications. The research reveals complex processes that characterize mangrove ecosystems on Manoka and Cape Cameroon Islands. The lack of regulations in urbanization and the continuous growth of infrastructure have led to a significant increase in land conversion, causing negative impacts on natural landscapes and forests. The repeated instances of flooding and coastal erosion have further shaped landscape alterations, fostering the proliferation of water and mudflat areas. The unregulated use of mangrove resources is a significant factor in the degradation of these ecosystems. Activities including the use of wood for smoking and fishing, together with the coastal pollution resulting from the absence of waste collection, have had a significant influence. In addition, forest operators contribute to the degradation of vegetation, hence exacerbating the harmful impact of invasive species on the ecosystem. Strategic interventions are necessary to guarantee the sustainable management of these ecosystems. The proposals include advocating for sustainable wood exploitation techniques, using appropriate techniques, along with regeneration, and enforcing rules to prevent wood overexploitation. By implementing these measures, the ecological balance can be preserved, safeguarding the long-term viability of these precious ecosystems. On a conceptual level, this paper uses the framework developed by Elinor Ostrom and her colleagues to investigate the consequences of open access resources, where local actors have not been able to enforce measures to prevent overexploitation of mangrove wood resources. Governmental authorities have demonstrated limited capacity to enforce sustainable management of wood resources and have not been able to establish effective relationships with local fishing communities and with communities involved in the purchase of wood. As a result, wood resources in the mangrove areas remain largely accessible, while authorities do not monitor wood volumes extracted nor methods of exploitation. There have only been limited and punctual attempts at forest restoration with no significant consequence on mangrove forests dynamics.

**Keywords :** Mangroves, forest management, governance, open access resources, Cameroon

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