Assessment of the Spatial Evolution of the Mussulo and Samba Pequena Bay Wetlands Using Geotechnologies and Implications for the Ramsar Convention

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SUMMARY

The first Conference of the Parties to the Convention on Biological Diversity recommended the classification of Ilhéu dos Pássaros as an Integral Nature Reserve, while the Ramsar Convention provides guidelines for the protection of marine wetlands with depths of up to six metres. The Mussulo peninsula, Mussulo Bay, its islands and Samba Pequena Bay form a dynamic coastal system increasingly affected by human occupation. Although Angola is a signatory of several environmental conventions, it still lacks officially protected marine or coastal areas, making Mussulo a strong candidate for classification. To assess the spatial and environmental evolution of the area, historical maps and satellite image time series were analysed using geotechnologies and geographic information systems. The analysis revealed shoreline advance, expansion of island areas, emergence of new islands and a progressive reduction in both flooded area and bay depth, mainly associated with increased sedimentation from the Cambamba river basin and the Samba coastal zone. Formerly submerged areas have also been occupied by buildings, increasing environmental and social risks. Without effective management and protection measures, environmental degradation is likely to intensify. This study provides scientific support for monitoring coastal dynamics and for classifying the Mussulo area as a protected zone under the Ramsar Convention, contributing to the conservation of wetlands and mangroves.