Developing an area-based approach to understanding coastal landscape character in a changing climate: Adapting LCA for Sri Lanka

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Introduction

Landscape Character Assessment (LCA) has become an essential tool in understanding the distinctive features that define landscapes and guiding planning responses to environmental change. In Sri Lanka, where coastal regions are highly populated and economically vital, climate change, particularly sea level rise (SLR), poses increasing risks to ecosystems, livelihoods, and cultural landscapes. However, current planning frameworks remain fragmented and lack systematic integration of landscape character as a foundation for decision-making. This study focuses on the expert perspectives that inform the development of an area-based LCA framework suited to Sri Lanka's coastal context, with the broader aim of contributing to adaptive and sustainable planning approaches in island nations.

Methodology

This paper draws on qualitative insights from semi-structured interviews conducted with subject-matter experts in landscape Architecture, planning, and environmental management. The expert interviews form one part of a larger study that also includes interviews with government officials and a review of national policy documents, which are ongoing. Data were analysed using thematic analysis to identify key patterns and relationships among expert perceptions. Four major themes emerged: (1) establishing a basis for landscape characterisation in Sri Lanka; (2) identifying landscape attributes encompassing the character of Sri Lanka's coastal landscapes under climate change and SLR; (3) developing an area-based approach to LCA for the coastal belt; and (4) integrating LCA into national and regional planning systems.

Findings

Experts conceptualised landscape character as a layered construct shaped by visual, ecological, and cultural dimensions, emphasising that character is both physically expressed and experientially perceived. They identified Sri Lanka's coastal landscapes as highly dynamic systems influenced by biophysical processes, human activity, and climate pressures. Sea level rise, unplanned development, and erosion were seen as accelerating transformations in landscape form and function. Experts strongly advocated for a context-specific, attribute-based, and multi-scalar LCA approach capable of capturing the diversity and vulnerability of coastal environments. They also highlighted the need to redefine existing coastal boundaries and strengthen institutional mechanisms for coordinated action.

Significance for Policy and Practice

Findings from the expert interviews underscore the need for a context-specific, area-based LCA framework that integrates ecological data with cultural and perceptual values, ensuring both scientific rigour and local relevance. Embedding LCA into planning processes can enhance adaptive capacity, inform coastal management, and support more resilient and equitable landscape governance.

Conclusion

The expert insights reveal that a context-driven, area-based LCA approach can play a transformative role in shaping climate adaptation strategies for Sri Lanka's coastal landscapes. As further analysis with government stakeholders and policy documents progresses, these findings provide a crucial

foundation for developing an operational framework that links landscape character, planning, adaptation and resilience across scales. This work not only strengthens Sri Lanka's approach to landscape planning but also offers transferable lessons for other island nations facing similar environmental and cultural challenges.