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Biodiversity - 2014: Rapid optimum site selection (ROSS) for biodiversity conservation: A new approach for securing ecological sustainability in the developing world

P O Phil-Eze
University of Nigeria, Nigeria, Email: philip.phileze@unn.edu.ng

Abstract

Selecting sites for biodiversity conservation that commands respect among local communities and ensures ecological sustainability in the developing world, largely dependent on primary economy is a daunting task. This is because the application of already established 32 site selection criteria in the evaluation of conservation sites in the developing world is not only cumbersome, but also time consuming and requires significant funding that many developing countries cannot afford. This is why the many strategic action plans to conserve biodiversity by various governments have not yielded encouraging results. We must therefore harness the collective wisdom of Indigenous technical knowledge (ITK) together with science to create conservation sites in collaboration with local communities especially in regions of intensive oil and gas exploration and production such as the Niger delta region of Nigeria.

This presentation leverages from cognate literature and participatory field research to determine how a Rapid optimum site selection (ROSS) with few criteria can be achieved for biodiversity conservation in areas of not only high biodiversity value but also intensive energy development without infringing on sustainable local livelihoods as a means of ensuring ecological sustainability.

The established 32 site selection criteria were subjected to Principal components analysis (PCA) and six (6) orthogonal components were identified as the most significant underlying criteria that explained 100% of variance among the 32 site criteria raw data matrix. Thereafter, cluster analysis grouped and ordered the extracted site criteria according to their relative strength as deployable indices for application in site selection. The six site selection criteria identified are here presented to be deployed for Rapid optimum site selection (ROSS) in which most aspect of scientific and indigenous knowledge are encapsulated for a successful biodiversity site selection, biodiversity conservation and ecological sustainability in the developing world.

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