## The first development model for geoparks: The CES Model

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A geopark is established to achieve geological conservation, geoscientific education and sustainable development. Criteria are set by the Global Geoparks Network (GGN) as standards to achieve these objectives. Aspiring geoparks must meet these criteria in order to be accredited as global geoparks. After acquiring global geopark status, most geoparks will incorporate these criteria into their earlier short and long term development plans. To conduct effective self-gauging of their performance according to the GGN criteria, a development model may help to reflect the actual situation, identify matters of concern, adjust or re-allocate resources and predict future problems and trends. Currently, there are no simple measurements available to measure the performance of geoparks. Therefore, a 'Conservation, Education and Sustainable Development Model' (CES Model) is developed to indirectly assess their performance through comparing proportions of investment on conservation, education and sustainable development. The financial records of a geopark are screened and extracted to obtain three sets of data associated with investment on conservation, education and sustainable development. The proportions of the categorized data are compared to check the weighing of each data set to tell whether the geopark is doing more on conservation, education or sustainable development. The overall performance of the geopark is then evaluated by considering the age of the geopark. The model can actually depict how well a geopark is doing towards establishing an ideal geopark of achieving the three original geopark objectives. It can also be used to compare different geoparks, whether they are conservation oriented or sustainable development oriented. However, the CES Model may have limitations such as the difficulty of creating an accurate classification of investment items and the possible lack of an independent auditing body to ensure the accuracy of the data supplied by the geoparks. Its effectiveness is also hampered by the fact that high investment does not necessarily guarantee high performance. Therefore the CES Model requires more field testing, fine tuning and improvement. It is however, by far one of the most effective models to assess the performance of geoparks.

Keywords: GGN criteria, scientific model, CES Model, measuring performance