The application of carrying capacity imperative in sustainable geopark planning

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Carrying capacity is a concept related to the optimum number of visitors and the engagement of their activities without creating environmental degradation. This concept has been widely employed in nature tourism for managing outdoor recreation by tourism managers, researchers, and policymakers for sustainability and conservation reasons. As a stream of nature tourism, geotourism involves visiting fragile natural areas in the form of hiking, trekking, and camping. The unique aspect of geotourism is that it specifically focuses on landscapes with geological and geomorphological features, such as weathering, erosion, deposition, igneous processes, and tectonic activity. Properly run geotourism activities should instill visitors with a sense of appreciation for particular geological structures and physiognomic characteristics of fossils, rocks, sediments, landforms, and landscapes in addition to commonly found tourism motivations. To apply the carrying capacity concept in such unique landforms and for the said purposes, adaptation to the conventional carrying capacity approaches is required even though the main activities of geotourism are similar to tourist activities in other tourism contexts.

Against this background, conducting a systematic review of the current state of knowledge on the carrying capacity imperative applied in the members of Global Geoparks Network since 2004 when “Geoparks” was first proposed as a UNESCO programme would be appropriate. This paper thus purports to examine (1) how the generic carrying capacity imperative minimizes the environmental degradation associated with geotourism and maximizes the sustainable use of natural resources in global geoparks, and (2) what kind of adaptation is called for in the application of conventional carrying capacity imperative associated with geological heritage. Based on these, we hope to advance the methodological innovation of carrying capacity imperative related to global geoparks for the sustainable management of geotourism resources in the future.

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