Antarctic Sustainable Tourism: Impact Assessment and Dynamic Management

Shahab Kariminia\textsuperscript{a}, Sabarinah Sh. Ahmada\textsuperscript{*}, Rugayah Hashimb

\textsuperscript{a}Faculty of Architecture, Planning and Surveying, Universiti Teknologi MARA, 40450 Shah Alam, Selangor D. E., Malaysia
\textsuperscript{b}Faculty of Administrative Science and Policy Studies, Universiti Teknologi MARA, 40450 Shah Alam, Selangor D. E., Malaysia

Abstract

Over the past two decades, Antarctica has experienced a severe eco-environmental degradation due to tourism impacts. The new, diverse and complex tourism activities and technological advancements demonstrate the current regulatory system is insufficient. This study aims to analyze the Antarctic tourism impact, investigate the assessment methods and propose a dynamic management system. This paper suggests two assessment indicators i.e. Antarctic ecological footprint (ATEF) and Antarctic tourism environmental carrying capacity (ATECC) along with nine management strategies. A flowchart demonstrates dynamic process of impact analyses, assessment and management. This system can be deployed to design a dynamic regulatory system toward sustainable Antarctic tourism.

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1. Introduction

The widespread climate change has recently become an issue of global concern. Examples of the effect of this change during the last decade are extinction of species, rising sea levels and increasing air temperature. International treaties such as the UN Framework Convention on Climate Change (FCCC, 1992) requested anticipation, prevention or minimization of the cause of global warming and mitigation its adverse effects. Although the exact source, time and mitigation way were still uncertain, human