



Review

Review of cultural heritage indicators related to landscape: Types, categorisation schemes and their usefulness in quality assessment



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ARTICLE INFO

Keywords:

Cultural heritage
Cultural indicators
Landscape indicators
Landscape quality

ABSTRACT

The concept of cultural heritage is very broad, including: built-heritage, physiognomy of landscape as well as diverse intangible cultural values. Therefore, numerous diverse cultural heritage indicators (CHI) have been developed so far. Given this diversity and the lack of comprehensive studies summarising the developments in this field, this manuscript aims to fill this gap by: (1) analysing recent studies which refer to the elaboration and implementation of CHI (48 papers); (2) defining what kinds of categorisation schemes have been used recently and what factors determine their selection; (3) selecting the most useful indicators for planning and managing cultural landscape. Among the variety of concepts, approaches, methods, and indicator types, an overwhelming majority of CHI are state indicators, highlighting the need for further development of pressure indices. Most of the studies adopted only quantitative measures (54%), and more than half of the papers (52%) used only state indicators. The factors determining the choice of indicators included: the concept of cultural heritage, scientific background of researchers, goal of research, the availability of data, and the research approach. Based on four criteria (reliability, measurability, stability and applicability), the analysis showed the lack of an ideal indicator related to the quality of political actions, as well as perception dimensions. There are many useful measures referring to ecological quality, economic relevance, social support, visual and spatial quality.

1. Introduction

In the late 1990s, cultural heritage indicators (CHI) emerged on an international level, due to the development of documents such as Monitoring Human Settlements with Urban Indicators (UNCHS, 1997), Organization for Economic Co-operation and Development Framework (OECD, 1993), European Common Indicators Policy (EC, 2003) and UNESCO publications (UNESCO, 1996) (Volpiano, 2011). In the 21st century, this work has continued and key cultural indicator framework documents have been developed: Historic Landscape Characterization (English Heritage, 2005, 2008), The Convention for the Safeguarding of the Intangible Cultural Heritage (UNESCO, 2003) and Millennium Ecosystem Assessment (MEA, 2005). Parallel methodological and implementation studies have been carried out on the national and local levels by representatives from different fields of science (examples include: Cassatella and Peano, 2011; Delgado Rodrigues and Grossi, 2007; Eldaidamony and Shetawy, 2016; Nijkamp, 1989; Pearson et al., 2001; Sowińska-Świerkosz and Chmielewski, 2016; Vallega, 2008; Van Eetvelde and Antrop, 2009; Wascher, 2005). In spite, or because of the high number of such studies, elaborated indicators, categorisation schemes and adopted assessment methods are very diverse. This is primarily the result of a thematically very broad understanding of the

concept of cultural heritage, including: physiognomy of urbanised, agricultural and peri-urban areas, tourist function, all aspects of built-heritage (e.g., values, rarity, state of preservation, fragility) and the diverse spheres of intangible cultural values (e.g., identity, perception, transformation) (Volpiano, 2011). This diversity is also characteristic of the legislative level, as the review conducted by ICCROM Working Group 'Heritage and Society' (Jokilehto, 2005) showed; only taking into account the official, international documents from the 20th century, more than 40 different definitions of cultural heritage (CH) were used. Therefore, there is no consensus among researchers concerning which indicator(s)/indicator categorisation would be the most useful to evaluate, protect and monitor cultural heritage.

Moreover, there are different frameworks to assess such usefulness. For example, Jones et al. (2016) in relation to landscape social indicators used the minimum functional and quality requirements. The assessment of sustainable development indicators is based on three criteria: meaning, utility and technical performance (ISSD, 1997). Neri et al. (2016) focused on relevance and measurable aspects, which together with analytic soundness, were treated as requirements for an environmental indicator at a common international level by the Organization for Economic Co-operation and Development (OECD, 2003). A set of similar criteria, however, can be distinguished independently of

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<http://dx.doi.org/10.1016/j.ecolind.2017.06.029>

Received 20 December 2016; Received in revised form 6 June 2017; Accepted 14 June 2017

Available online 23 June 2017

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the indicator type and the phenomena in question. One of the most important is objectivity/reliability which refers to the solid scientific foundation and proven methods of assessment (Cassatella and Peano, 2011; Sowińska-Świerkosz, 2017). Additionally, policy relevance as well as the simplicity of collection and sampling are treated as important factors determining the practical use of any indices (Cloquell-Ballester et al., 2006; Donnelly et al., 2007; Loomis and Paterson, 2014).

Giving the diversity of CHI and the lack of comprehensive studies summarising recent developments, this manuscript aims to fill this gap by reviewing the latest studies on CHI. The paper refers to a cultural heritage conception that concerns landscape, heritage, environment and territory. The aim of the paper is threefold:

1. To analyse empirical studies which refer to the elaboration and implementation of CHI;
2. To define what kinds of categorisation schemes have been used recently and what factors determine their selection;
3. To define the best indicators of CH assessment, which are useful in the planning and management of cultural landscape.

2. The research procedure

Using the search engines Science Direct on ICM Server Elsevier and Springer journals database, a search was conducted based on the following criteria: heritage indicator OR cultural indicator in abstract, title, or keyword, all science fields, and published between 2006–2016. As a result, 805 articles (1 November 2016) were found addressing local and national levels and originating from all over the world. Next, a two-step evaluation of papers was executed (Fig. 1). Firstly, papers were rejected if they: did not directly examine the elaboration and use of CHI, referred to movable CH or were only reviews. Secondly, from the remaining set were chosen only those articles which included indicator categorisation. As a result, 48 articles on CHI from the last 10 years were selected.

Next, we summarised the selected studies based on the following aspects: research aim, CH concept, scale of research, applied methods, and types of indicators used. To characterise the categorisation of CHI, cluster analysis was conducted using Statistica 12 software, and then the factors impacting the choice of a given categorisation type were defined. The paper concludes with advantages and disadvantages of different types of CHI categorisation and the identification of the most useful indicators for the assessment of the quality of cultural landscape.

3. Results

3.1. Characteristics of studies

Most of the manuscripts (22) were case studies conducted in Europe; 7 papers were located in Asia and North America, 3 in Africa and 2 in Australia and South America (Table 1). Five papers did not indicate any

specific location, instead referring to a general type of area (e.g., cultural landscape, tourist regions, rural areas, urban districts, etc.). Most papers (35 items) were published after 2012, predominately in the last two years (2015 and 2016). Regarding journal, most manuscripts were published in Ecological Indicators (12 items), followed by Ecosystem Services (4), Land Use Policy (3) and Procedia-Social and Behavioral Sciences (3). Generally, most of the papers were published in journals classified as environmental science.

3.2. Overview of the studies

3.2.1. Main research aim

The analysed studies had three different main goals: methodology-, policy- and problem-oriented (Fig. 2). A large share of methodology-oriented works (21/44%) indicated the deficit of an existing framework to gauge the usefulness of spatial policy and land management. Specifically, they referred to marine policy (Biedenweg et al., 2016; Marques et al., 2013), sustainable tourism (Choi and Sirakaya, 2006; Lee and Hsieh, 2016) and cultural ecosystem services (Loomis and Paterson, 2014; Nahuelhual et al., 2014).

This deficit is also supported by the fact that only 21% of studies can be classified as policy-oriented. Among them, diverse aspects of CHI implementation in spatial planning are widely discussed. Examples included recreational planning (Caspersen and Olafsson, 2010) and agricultural landscape planning (Groot et al., 2010). Implementation of CHI into other policy sectors, including environmental management, local governance and public economic, is a rarity, as there is no adequate framework for these domains.

Most of the problem-oriented studies (6) focused on heritage conservation, including its tangible values (Antonson et al., 2010), intangible sphere (Zoeteman et al., 2016) or both of these dimensions (Eldaidamony and Shetawy, 2016). Additionally, social perception, stakeholders' opinions and public evaluation of cultural values (5 studies) are widely analysed, especially assessing ecosystem services (Darvill and Lindo, 2015; Fagerholm et al., 2012). The emphasis on the relationship between humans and cultural environment reveals that many researchers focus on a human dimension of CH and not only on its material structure. This focus is particularly true of recent studies, as 85% of papers focusing on social perception and intangible values were published in the last two years (2015 and 2016).

3.2.2. Overview of the CH concept

Radically different features and characteristics comprised CH in the reviewed studies. As stated in ICOMOS (2002), CH is 'an expression of the ways of living developed by a community and passed on from generation to generation, including customs, practices, places, objects, artistic expressions and values'. This broad concept means that the term CH used by authors comprises all aspects of space and time: buildings, historic places, spatial composition of landscape, living experiences, every-day and festive practices or even mental connotations.

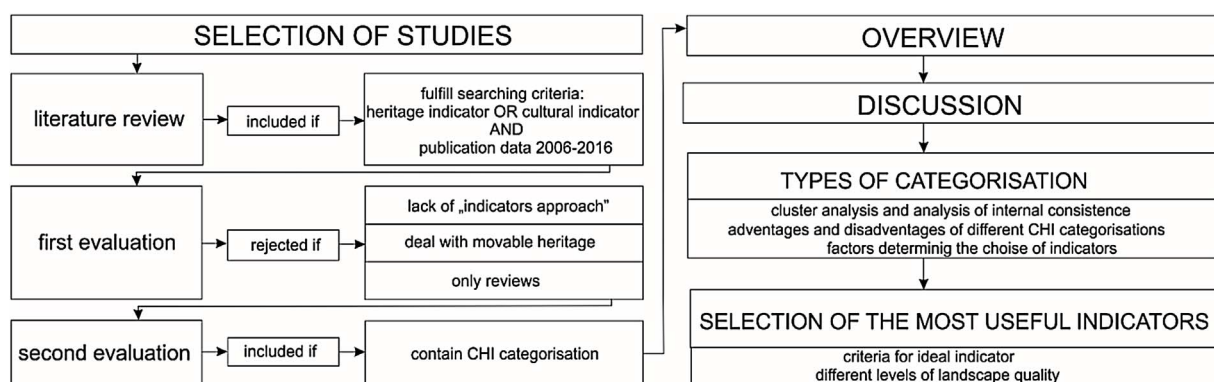


Fig. 1. Main stages of the research procedure: selection of studies, overview typology, conclusions, the scope of each stage and relationship between them.

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