

Chapter 30

Alternative Tool for an Integrative Landscape Interpretation: Case Study of the Arrábida Maritime Coast, Portugal

Ricardo Ribeiro

University of Lisbon, Portugal

Joana Corte Lopes

University of Lisbon, Portugal

François Boucault

École Nationale Supérieure d'Architecture de Nantes, France

ABSTRACT

This chapter aims to describe an alternative tool developed to represent the interdependence established in the landscape between the human activities and the capacity of natural resources to answer for their needs. Therefore, focused on a case study of the Arrábida Maritime Coast located in Portugal, the research not only allowed to analyze the ecological and cultural landscape components but also to diagnose its resilience to the human activities. In this sense, considering the functional limits of the current cartographic representation models, it was also necessary to set up a new complementary diagrammatic model to show how the landscape interdependences are established. Despite their complex scientific data calculation nature associated with the geoprocessing techniques to connect both representation models, this alternative tool has integrative and intuitive interpretation features, by which it is possible to know the landscape suitability to support new land uses and land covers.

INTRODUCTION

The research work described in the present chapter was carried out in 2015 at the University of Lisbon (ULisboa), Faculty of Architecture (FA), which study case was within the “Sea Architecture” research project, funded by Fundação para a Ciência e a Tecnologia (FCT) between 2011 and 2014.

FA is one of the 18 public higher education schools at ULisboa. FA offers, in the field of Architecture, Urban Planning, and Design, the greatest diversity of courses leading to Bachelor’s, Master’s and Ph.D.’s degrees, as well as post-graduate courses of advanced studies and continuing training, integrating the Erasmus program with a large number of international students. Its main training strategy to impart knowledge is a multi-disciplinary approach to the design of “objects,” which can range from a hand scale to the landscape scale. Professors and researchers aim to train professionals in the project, consulting and research areas related to the building environment, the culture and the industry, contributing to increasing the productivity, competitiveness, and international innovation.

In this context, the strategy of the continuing training is developed by different working groups of Research Centre for Architecture, Urbanism and Design (CIAUD) to produce a specialized and interdisciplinary research. One such group is Laboratório de Projecto Sustentável (Sustenta) which, in landscape subject, seeks to develop sustainable methods, not only at an analysis and diagnosis level but also in a conceptual way, related to the land-use planning based on Geographic Information Systems (GIS).

The Sustenta team has been working on several research projects with other international teams – namely with Erasmus students from the École Nationale Supérieure d’ Architecture de Nantes (France) – that contributed to a proposal of a new integrative interpretation method of the landscape under the concepts of the ecological land suitability associated with its cultural identity. The recent landscape research work experience has been developing the study of the relationship between the ecosystems and the human appropriation processes. This kind of studies lies upon the principle of a human landscape recognition rooted in the context of current societies: not only considering human action as an interfering causality on the environment but also as an active principle of responsibility, while being part of a community. This process requires a thorough research for alternative tools that can go beyond the current challenges by integrating human activities into its territory. For instance, the current management plans have been experiencing this difficulty handling with several expectations and needs of human activities without jeopardizing natural resources, hence resulting in inadequate land-uses-covers.

In this sense, the first part of the following chapter makes a general description of how the urban occupation processes caused problems in coastal areas ecosystems along last centuries in Portugal. Then, it is suggested an integrative landscape interpretation according to the European Landscape Convention principles to solve that problems, namely in a land-use and land-cover planning point of view. Based on a morphological and typological approach, arising from a dynamic interaction between ecosystems and human cultural expression according to a landscape resilience concept, it is proposed an alternative tool of ecosystems analysis and the human occupation diagnosis focused in a case study of the Arrábida Maritime Coast.

22 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/alternative-tool-for-an-integrative-landscape-interpretation/222921

Related Content

Extending Metadata Standards for Historical GIS Research: A Case Study of the Holocaust in Budapest and the Armenian Genocide in Turkey

Shelley Burleson and Alberto Giordano (2015). *International Journal of Applied Geospatial Research* (pp. 88-109).

www.irma-international.org/article/extending-metadata-standards-for-historical-gis-research/129810

Land Classification Research: A Retrospective and Agenda

Michael N. DeMers (2014). *International Journal of Applied Geospatial Research* (pp. 82-92).

www.irma-international.org/article/land-classification-research/118261

Impact of Training Set Size on Object-Based Land Cover Classification: A Comparison of Three Classifiers

Gerhard Myburgh and Adriaan van Niekerk (2014). *International Journal of Applied Geospatial Research* (pp. 49-67).

www.irma-international.org/article/impact-of-training-set-size-on-object-based-land-cover-classification/118259

Recognition on Images From Internet Street View Based on Hierarchical Features Learning With CNNs

Jian-min Liu and Min-hua Yang (2019). *Geospatial Intelligence: Concepts, Methodologies, Tools, and Applications* (pp. 1411-1424).

www.irma-international.org/chapter/recognition-on-images-from-internet-street-view-based-on-hierarchical-features-learning-with-cnns/222954

Geospatial and Temporal Semantic Analytics

Matthew Perry, Amit Sheth, Ismailcem Budak Arpinar and Farshad Hakimpour (2009). *Handbook of Research on Geoinformatics* (pp. 161-170).

www.irma-international.org/chapter/geospatial-temporal-semantic-analytics/20400