UNESCO **World Heritage Sites** of Portugal – In a bit Different View

REKA BODNAR * [fyp444@gmail.com]
L. SZABOLCS MOLNAR ** [u238ster@gmail.com]

Objectives | Problem of vertical and horizontal study aspects are often faced when investigating the relationship between landscape and tourism. That is, while most of the landscape studies are map centred, the visitors view the landscape in sideways, thinking in photos depicting the landscape in mountains, valleys, buildings, etc. and not based on maps and profiles.
The focus of the study is to analyse how it is worth to evaluate a landscape attracting visitors from tourism and yet scientific point of view. During such computer analyses (dissecting into RGB channels) artistic images are obtained, which gave the idea behind this poster.
Our primary aim is to draw attention to the Portuguese UNESCO World Heritage Sites by the present example in a futuristic way using modern techniques.

Methodology | A computer evaluation method is based on GIS software well-known among geographers like the operation of the CORINE database is also based on the principle, with the difference that in our case the original image is not a satellite image or an orthographic photo but a traditional photo, a horizontal image of the landscape, world heritage value. Image analysis is the same but the perspective is different according to the application (i.e. tourism).
Traditional GIS softwares (e.g. ArcView, TAS, IDRISI etc.) are based on raster analysis that – as every analysing sotware – has problematic fields. Such is the definition of study areas where the human factor, i.e. experience plays an important role in this process.
The procedure can be applied either on traditional black and white, scanned (paper based) or digital photos provided that the photos to be compared are taken from the same (or similar) direction.
Limits of the method include the quality of the data. In simple, the principle is that the more detailed image has to be adjusted to the less detailed one in order to compare them. Climatic conditions (moisture, direction of sunlight, cloud cover, etc.) at the time of taking the photos also influence their quality, however, most of these effects can be filtered.

Main results and contributions | The application of the method is wide. Landscape historical research can be the most interesting regarding tourism. Here analysing the change in time of the landscape is the aim of the study as the history of the given destination can be understood best via the transformation process of the landscape.
Nevertheless change in percentage can be given by computer analysis of "was, became and why". This may give new momentum for turning strongly subjective landscape aesthetic studies into more exact methods. Take a hotel built into a mountain side where analysing the photos of the original landscape and the plan of the hotel, the increase in built-in

* **MSc**, University of Debrecen and **Assistant Lecturer** at University of Debrecen.
** **Geographer** at University of Debrecen.

areas can be calculated exactly by this method, i.e. the grade and orientation of change in the given landscape can be measured.
Numbers obtained in this way can be very important regarding landscape planning and decision makers as the planned investment can be evaluated regarding benchmark values of building plans in the planning stage. Considering the particular example the percentage of the landscape shaded by the hotel can be calculated and the risk of landscape deterioration can be assessed.
Application of this method can be useful in studying the habitat change of landscapes as a result of biological productivity of vegetation in different seasons as this method is much cheaper than prepare or buy satellite/aerial images of the area in every season. Exposing tendencies in agricultural land-use changes are also important and the list is long.
In this case no calculations are presented and the characteristic of the method is emphasized that dissection into RGB channels turn a photo depicting a desitnation site so different, unusual and attractive to the eye by the fake colours.

Conclusions | According to our research any side-view image or photo can be interpreted by traditional GIS softwares just as maps or other vertical data. Dissection into RGB channels widespread in analysing orthographic, aerial and satellite images, such fake colour pictures are obtained that can be regarded as artistic. Novelty, unusual colours of these images attracts the vision and focus the attention, thoughts of the visitors to the sites on the images. This new method of attracting attention can bring new and fashionable colours into the marketing of tourism destinations and we recommend them for tourist offices.