



Suitability of multicriteria approach for assessing landscape values in the UNESCO Lake Ohrid region on the Albanian side

Laura Shumka*¹, Andi Papastefani ¹

¹Albanian University, Department of Art and Design, Tirana, Albania, shumkalaura@gmail.com;
a.papastefani@albanianuniversity.edu.al

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Abstract

The model takes into account with regard to landscape assessment in Lake Ohrid region, Albania is based on five assessment dimensions which are considered to be independent: the ecological, productive, economic, social and cultural evaluative systems and following this approach it recognizes and assumes conflicts and trade-offs between these components. The inclusion of the production system based that in the focus area is of limited rate, as an independent assessment dimension is for the first time employed within area and is justified because it is the link that connects the ecological and economic systems. Following the nature and dimension the economic activities and ecosystem services most directly influences on the ecosystem, while the production system includes the attribute of ecological or intended sustainability.

Introduction

The aim of this paper is to propose this model as suitable for conserving aquaculture and agricultural landscape in a typical area belonging to developing country contexts in an area that is hotspot for biodiversity and cultural values [1, 2, 3, 4]. The Lake Ohrid region due to its natural and cultural values is one of the most representative site in both Albania and North Macedonia. For these reasons firstly Lake Ohrid has been inscribed on the UNESCO World Heritage List under the name “Ohrid Region with its Cultural and Historical Aspects and its Natural Environment”, North Macedonian side [5]. So, in 1979, it was inscribed as natural heritage, while in 1980 it was extended to include the cultural heritage as well. On the initiative of the competent institutions, the Ministry of Environment and Physical Planning and of the Ministry of Culture, the Institute for Protection Monuments of Culture and Museum – Ohrid, the Cultural Heritage Protection Office, and the OE, the new name of the nomination was proposed – Natural and Cultural Heritage of the Ohrid Region. The new proposal was accepted in 2006 at the 30th Session of the World Heritage Committee. At the very late stage the UNESCO World Heritage site was expanded on Albanian site, so since July 5th 2021, this lake shared by Albania and North Macedonia is inscribed on the UNESCO list as mix heritage, natural and cultural property.

Traces of human existence on the territory of the within area date back to the oldest times and it could be followed through the rich archaeological heritage [5]. The favorable geographic and climate conditions have enabled the settlement and presence of humans as early as the Prehistoric Period.

The contact with the lake shore and the sweet-water lake rich in fish, as one of the essential preconditions for life, has allowed establishing of both palaphitte pile-dwelling settlements and settlements located along the shores itself. This is witnessed by the numerous pile-dwelling settlements and recorded archaeological sites from the Prehistoric Period on the territory of this region.

Material and Methods

A multicriteria approach model was used to assess landscape values of the Ohrid region and Pogradec municipality. This area exhibits a notable richness of situations owing to their socioeconomic and environmental variability. The region contains tectonic lake basin, calcareous plateaus and alluvial systems that define a complex landscape changing and land uses in mountain forests to lakeside shrub land. Further, the influence of the main regions city and its urban metabolism has led to important residential, tourism and infrastructural developments, all with considerable impact on the landscape.

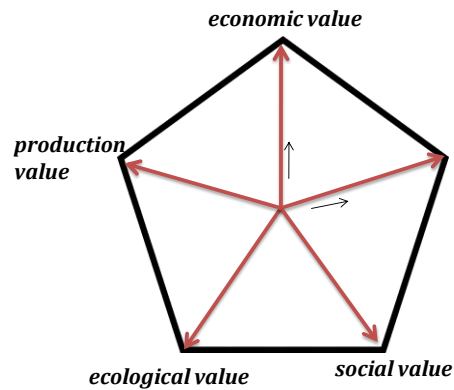


Figure 1. Satellite image of the Ohrid Lake with the Balkan region (left) and five-dimensional model of the feasible sustainable use

Results and Discussions

The introduced model to be followed is presented in the Figure 1 (b), as an example of the sound sustainable scenario that takes into account the five assessment dimensions [6]. With this contribution we propose this model as suitable for conserving aquaculture and agricultural landscape in a typical area belonging to developing country contexts. In this case, landscape conservation is not considered an option of quality and services assessment, but an inescapable necessity for a basic human use and excavations. This scenario is based on findings of [6, 7] and authors opinion and is characterized by: (a) the maintenance of a unique Ohrid Lake ecological features, (b) the production system not being intensive but compatible with the ecosystem carrying capacity, (c) the ecological value increasing by means of improving quality of goods and services that is in line with Lake Ohrid UNESCO site objective for conservation, (d) increasing cultural heritage (branding, landscape elements and knowledge about the resources that so far has been significantly neglected and (e) the search for equity, social integration and distribution of wealth.

Following findings, the setting is highly vulnerable to excessive lakeshore development, landscape fragmentation, inappropriate restoration, construction on open hillsides and high-rise buildings. On a finer scale, the quality of land and waterscape is diminished by inappropriate shoreline development, solid waste and air and water pollution. Coastal development is breaking the ecological linkages between the lake and its setting; the remaining intact areas between the Lin Peninsula and the border with Macedonia and elsewhere along the coast are of particular importance for conservation and wise management.

Land use changes affection of the proposed model

Understanding possible lake impacts from past management practices and changes in biophysical processes in the lakes require accurate quantitative assessment of historic and current landscape patterns. Indeed, obtaining accurate quantitative assessment is a complex process because the lakes are shared among different countries that recently experienced uneven and rapid changes at many levels including agricultural, natural resources, demographic, political, socioeconomic and climatic.

In Albania, the forest has experienced heavy damages from cutting and fires. Most of the cutting is for fuel wood although lumber is also produced. In the hills above Pogradec, chestnuts are harvested from the remaining

forests. There are few reforestations after cutting, and erosion is a serious problem in much of the forest. The use of the forest for pasturing goats has also contributed to the erosion problem by overgrazing the understory vegetation. Contrary to that, the forests in Macedonia are in generally better condition. Cutting is regulated and the land must be left in good condition for regeneration.

The expansion of inhabited area, increase of population and infrastructure developments were significantly affecting the littoral part of the lake and its ecosystems.

In both inscribed and nominated property the vital small wetlands in vicinity of Ohrid city and in between Pogradec and Driloni springs were converted through infrastructure and agriculture development. The ecosystems that have been modified by human interventions - mostly for forestry, agriculture and fishery purposes - are still conserving the features of the original cultural landscape; there are no intensively mechanized activities in the territories of the inscribed and nominated property and no particularly destructive settlements. In the urban areas, sprawl has expanded, primarily in response to touristic demands. Nevertheless, the phenomenon has not reached disastrous consequences yet, and the adoption of integrated land use planning, linking urban and rural areas, is considered to be an element of key importance in the future proper management.

Conclusion

The proposed model is based on the importance of the elements of the production system, primarily agriculture and fishery as a link between ecology and economy and it is recuperated as a basic element for the assessment of the sustainability of development and of the natural resources management.

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