NEW CHALLENGES WITH GEOTOURISM

QUANTITATIVE ASSESSMENT OF PSILORITIS' GEOTOPES WITH EMPHASIS ON PROTECTION AND GEOTOURISM (CRETE, GREECE)

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Assessment of geodiversity's value has gradually been studied on a scientific base during the last two decades. Starting from Australia, Tanzania and other central European countries this effort was first based on the description of the different features of geodiversity and on the determination of the qualitative value that certain geotopes may have at certain places. However, for the purposes of comparisons and monitoring of the geotopes in recent years new models to quantitatively evaluate geotopes have been published using approaches developed for the evaluation of geomorphosites and landscape. Regardless the scientific value that these assessments may add to a territory, quantitative evaluation of geotopes should be a strong tool for the management and conservation of a geopark and a basic constituent of a realistic action plan.

Till now similar efforts have been carried out in some Spanish geoparks, as well as for Lesvos Petrified Forest. In Psiloritis Natural Park a qualitative assessment of the known geotopes had been elaborated several years ago in order to identify their value and define their potential contribution to scheduled educational and geotourist initiatives. This early study was the base for the detailed quantitative assessment presented here, that was carried out during the preparation of the park's new action plan. A sum of 63 main geotopes was used which refer to the great variety of Psiloritis geodiversity, including landforms, fossil sites, water resources, caves and other karstic features, tectonic structures, as well as cultural landscapes. The necessary input data were taken by the geopark's data base and were additionally enriched by field observations and published data helping to update conservation and environmental status.

In order to assess the geotopes a certain methodology had to be developed. This was produced after comparing and testing several models proposed to evaluate either the touristic value or the conservation status of landforms and geomorphosites, as well as similar models developed in other geoparks, like the one for the Lesvos Petrified Forest. However, all these models seem to be dependent on the specific nature of the studied sites or/and to certain protection environments, and couldn't be applied to an extended, multi-protected and much varied in geotopes territory, like Psiloritis Mountains. Hence, our methodology is based on earlier proposed criteria combined in such a way that can be applied to all kind of geotopes and be used to assess all the aspects of geotopes' value. Defined criteria are separated in six main groups: 1) "scientific", 2) "ecological and protection", 3) "cultural", 4) "aesthetic", 5) "economic" and 6) "potential of use". Each main group is comprised by a number of sub-criteria, and for each one a common scoring system (ranging from 1 to 10) is applied.

The application of this methodology to the 63 Psiloritis' geotopes resulted in the recognition of some very important geotopes which fit well to the previously suggested as of international or national importance sites, where as others having lower score can be assigned to those regarded previously as of regional or national importance.

Finally, in order to fulfil the purposes of this assessment a new formula had to be produced in order to estimate the touristic, economic and educational value of each geotope, as well as the need of protection. To test the formula we used about 15 geotopes for which their individual values are known and well established in local societies. These are open to public caves, sites with intense educational and scientific activity, or even very remote

and inaccessible to the majority of the visitors. The suggested formula is thus based on a combination of the afford mentioned criteria groups using for each different weighting coefficients depending on the studying value. For the educational value we combine the scoring of scientific, cultural and aesthetic criteria, for the touristic value we combine the scoring of aesthetic, cultural, potential of use and economic criteria and for the need of conservation the scoring of scientific criteria plus a factor presenting the protection status. This elaboration of the 15 used geotopes gave very sufficient results and can be regarded as the most reliable from the five produced.

Applying this methodology on geoparks' geotopes certain and compact results can be delivered, useful both for comparisons and future planning, as well as for monitoring purposes. The only individual decision that a geopark has to take is where to set the base line for the selection of geotopes suitable for tourism or educational development or for those requiring conservation measures.