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A review of the activities of the IAG working group on geomorphosites over the last ten years

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During the last two decades a renewed interest emerged in the scientific community for geoheritage, geoconservation and geotourism research. This was the reason for the International Association of Geomorphologists (IAG) for creating a specific working group on geomorphosites in 2001, with the aim to improve knowledge and scientific research on the definition, assessment, cartography, promotion and conservation of geomorphological heritage. The working group is chaired by the two authors, experiences were shared during several workshops and international conferences, and results were collected in several special publications (http://www.geomorph.org/wg/wggs.html). Several intensive courses for Master and PhD students were also organized and a book was published, dedicated particularly to Master and PhD students working on geomorphosite issues (Reynard et al., 2009). This contribution proposes a review of the working group activities since 2001 that focused on four main domains:
(1) Definition and conceptualization. Geomorphosites are a type of geosite that is portions of the geosphere that present a particular importance for the comprehension of the Earth's history. Geomorphosites have to be considered as the result of human valuation. Conceptualization related to the value of geomorphosites is still in course. Nevertheless, three groups of values can be demonstrated: the scientific value (that is the interest of sites for Earth history and for the history and epistemology of geomorphology), several additional values (aesthetic, ecological, and cultural in a broad sense), and use and management values, that can be divided in three groups (educational value, economic value, including the tourist value, and protection). The scientific and additional value can be considered as intrinsic values, whereas the management and use value are to be related to extrinsic or societal values.
(2) Assessment. Several methods, based on the measurement of specific features of geomorphosites, were applied. A problem found in practically all of them is the subjectivity of assessment and, consequently, the difficulty for one operator to replicate results obtained by another. The original objective of the WG was, after four years, to publish guidelines to assess geomorphosites. Nevertheless, the works have shown that the development of general guidelines to be used by all the countries was quite impossible, because the choice of assessment methods depends on the objectives and the context of the research. For this reason, the project of guidelines was abandoned and several of the methods available were developed. These methods have their specificities and are based on several assessment criteria. Nevertheless, it is possible to recognize common and recurrent assessment criteria, like rarity, representativeness and integrity, and others, for example ecological value, palaeogeographic importance, educational value etc., that are dependent on the context of the assessment and on the aims of the research.
(3) Mapping. Designing maps is not a simple procedure and in the codification phase (implementation of the map) several points should be considered, in particular, when mapping geomorphosites efforts should be made to identify and use symbols corresponding to semiotic criteria (communicative immediacy, graphic originality and flexibility). Although it is not possible to set up a standardized methodology valid for all purposes, the WG proposed guiding principles for geomorphosite mapping.
(4) Education and dissemination. The issue of interpretation of geomorphological heritage, in particular the sensitive question of the adequacy of geoproducts with the public needs and previous knowledge, was also addressed by the WG, and several scholars proposed methods for interpreting geomorphology in a geotourist context.
Several questions have not been solved until now and should be addressed in the future: (1) The scale issue in geomorphosite studies is not clearly addressed, even if it impacts on several domains such as the assessment and cartography of geomorphological heritage; (2) Relationships between geoheritage assessment and geodiversity assessment may also be explored in the future, especially in terms of geoconservation; (3) Guidelines such as those proposed for the mapping issues and for the elaboration of geotourist products are particularly useful and a book of good practices in the fields of geomorphological heritage assessment, cartography and interpretation should

be encouraged; (4) Finally, the integration of geomorphosite studies with other scientific domains is needed, in particular with educational and social sciences in the field of public characterization, with computer sciences in the field of knowledge dissemination using digital technologies, with political and law sciences in the field of geoconservation, and with process geomorphology in the management of geomorphosites in particularly dynamic environments.

Reference

Reynard E., Coratza P., Regolini-Bissig G. (2009) (Eds.). Geomorphosites. München, Pfeil Verlag.