Inventory, evaluation and promotion of the Essaouira Province geoheritage (Morocco): Toward a local and socio-economic sustainable development

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Essaouira Province, as part of both Atlantic margin and Atlasic domain, hosts important and diverse natural attributes. The recognition of its important geological history of more than 250 million years and its tourist vocation based on the promotion of cultural, natural and human heritage are the main criteria to choose this study area. Moreover, since 2001, Essaouira has been designated a UNESCO World Heritage Site, which has long been a magnet for both national and international visitors.

The present work aims to inventory, assess and promote the major occurrences of geodiversity of Essaouira province, which are still unrecognized, fully unrevealed and unexploited, for conservation and development purposes. The inventory allows us to select the most significant geosites that are assessed through an adaptation of the method proposed by Reynard et al. (2016), based on the scientific and the additional criteria. This new approach that it is being developed and tested by our research group “Equipe de Géodynamique, Géo-éducation et Patrimoine Géologique” of the Faculty of Sciences (El Jadida), consists of the identification of the potential geosites according to a spatial hierarchy (primary, secondary, tertiary and individual geosites), while keeping the original metrics. This procedure has enabled us to assess geosites in terms of their scientific, cultural, recreational and aesthetic values: (i) Jbel Amsittene primary geosite (6 secondary and 15 tertiary geosites); (ii) Tidzi Diapir primary geosite (14 secondary geosites); (iii) Jbel Hadid primary geosite (14 secondary geosites). The remaining geosites in the province have been considered as individual geosites (21 scientific and 16 cultural). A database has been created by GIS-based implementation and the outcomes that highlights the most relevant geosites are plotted on synthetic maps that integrate all data pertaining to the basic infrastructures.

This work provides a contribution to the Moroccan geoheritage inventory and promotion. therefore, we suggest activities to be developed, mainly in the fields of geotourism and geo-education. Indeed, these activities will allow popularizing Earth Science and catalyzing sustainable socio-economic development of rural areas while keeping and promoting their local identity.

Consequently, it is important to integrate the geoheritage in the region's development-related
priorities and strategies and to create a geopark in Essaouira Province.