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How a geomorphosite inventory can contribute to regional sustainable development? The case of the Simen Mountains National Park, Ethiopia

Lukas Mauerhofer (1), Emmanuel Reynard (1), Asfawossen Asrat (2), Hans Hurni (3), and Ethiopian Wildlife Conservation Authority (4)

(1) University of Lausanne, Institute of Geography and Sustainability, Lausanne, Switzerland (lukas.mauerhofer@unil.ch, emmanuel.reynard@unil.ch), (2) Addis Ababa University, School of Earth Sciences, Addis Ababa, Ethiopia (asfawossen.asrat@aau.edu.et), (3) University of Bern, Centre for Development and Environment, Bern, Switzerland (hans.hurni@cde.unibe.ch), (4) Represented by Maru Beyadegelegne, Abebaw Azanaw Belayneh Abebe, and Fasika Negussie, Simen Mountains National Park, Debark, Ethiopia (chiefwarden@simienmountains.org)

This research aimed at investigating how an inventory of geomorphosites can foster or improve the knowledge and management of geomorphological heritages in the context of developing countries. Accordingly, a geomorphosite inventory in the Simen Mountains National Park (SMNP), Ethiopia was conducted following the method of Reynard et al. (2015). The national context of geoheritage and geoconservation in Ethiopia was appraised and a road map for the management of the inventoried sites in the SMNP was elaborated.

Ethiopia hosts numerous geoheritage sites, some of which of highest international significance. Therefore, geotourism has recently been promoted throughout the country (Asrat et al., 2008). Despite numerous trials of the scientific community, there is not yet a national policy for geoconservation in the country. Many parts of Ethiopia are underdeveloped in terms of economic subsistence and infrastructure, making these immediate priorities over conservation efforts. Nevertheless, this study showed that the Simen Mountains have the potential to become a UNESCO Global Geopark and that geosites could be used to develop geotourism within SMNP, and that development and conservation are not contradictory.

Twenty-one geomorphosites were identified and assessed. Diverse geomorphological contexts including fluvial, structural, glacial, periglacial, anthropic and organic characterize the SMNP. The temporal stages, which allow the reconstitution of the morphogenesis of the Simen Mountains, are the Cenozoic volcanism, Last Glacial Maximum, Holocene as well as historic/modern landscape modification. Four synthesis maps were elaborated to present the results of the assessment. The average scientific value of the inventoried geomorphosites is very high compared to other inventories realized using the same method. This is particularly due to the extremely high integrity of the sites. Almost all geomorphosites are in a good state of conservation and only few sites are vulnerable to human encroachment. The educational interest of most sites is high but interpretation facilities are absent. With some minor adjustments, the application of the inventory method (Reynard et al., 2015) to the SMNP has proven successful and can be recommended for application to other areas in developing countries of similar well-documented geomorphology. However, the method could prove too complex for areas where basic knowledge on geomorphology is poor, as is often the case in developing countries.

Based on previous studies (in particular Asrat et al. 2012) and results of the current inventory, a road map for SMNP geomorphosite management was proposed. Eight strategic objectives and working tasks were considered, which include the development of geotourism products such as geotourist maps, geo-trails and guidebooks, geo-trekking, geo-sightseeing tours, and interpretive panels as well as the training of geo-guides and capacity building of the park staff and specific management of the Lemalemo site, one of the most accessible geosites in the park. The overall goal is to raise awareness on the rich geomorphological heritage through geotourism development and empowerment of locals and thus to contribute to long-term protection of the geomorphosites. In conclusion the study revealed important potential for sustainable rural development in the Simen. Applied research will be necessary on how exactly the promotion products should be developed.

References

Asrat, A., Demissie, M., Mogessie, A. (2008). Geotourism in Ethiopia: archaelogical and ancient cities, religious and cultural centres: Yeha, Axum, Wukro, and Lalibela. Addis Ababa: Shama Books.

Asrat, A., Demissie, M., Mogessie, A. (2012). Geoheritage conservation in Ethiopia: the case of the Simien Mountains. Quaestiones Geographicae, 31(1), 7–23. doi:10.2478/v10117-012-0001-0.

Reynard E., Perret A., Bussard J., Grangier L., Martin S. (2015). Integrated approach for the inventory and management of geomorphological heritage at the regional scale. Geoheritage, doi: 10.1007/s12371-015-0153-0