

Cultural Heritage in Imghranes Massif (Drâa-Tafilalet Region, Morocco): An Optimist's Contribution and opportunity for the local people and Sustainable Tourism

Asmae Aichi, Sarrah Ezaidi, Mohamed Abioui, and Abdelkrim Ezaidi

Department of Earth Sciences, Faculty of Sciences, Ibn Zohr University, Agadir, Morocco

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ABSTRACT: A real outdoor museum, the Imghranes Massif (Drâa-Tafilalet Region, Morocco) has a rich geological, archaeological and cultural heritage, diversified and deeply rooted in the past, as evidenced by the density and originality of its material and immaterial aspects. In an underdeveloped region with strong cultural and natural potential such as Drâa-Tafilalet Region, the Imghranes Massif should represent an opportunity to develop its regional significance and an alternative for regional development. The rise of geotourism, geoeducation, and cultural tourism may be a major asset to this region. Institutions of these disciplines may enhance the local economy and be a good moderator of social behavior, in addition to being beneficial to cultural systems. This research may constitute a base that focuses on the methods of valorization and protection of the cultural heritage in Imghranes Massif to be put in place, in particular geotourism and geoeducation. Indeed, these activities can be a promising means of cumulative scientific popularization and economic profitability, the aim being sustainable development respectful of the local identity and the regional context.

KEYWORDS: Geoheritage, Geoeducation, Cultural heritage, Poverty alleviation, Imghranes Massif, Morocco.

1 INTRODUCTION

In North Africa, Morocco is one of the oldest human homes in Africa (the recent discovery in Jbel Irhoud, Richter et al. [1]). Many archaeological sites spread throughout his territory confirm the human presence. The Imghranes Region, Morocco, is known for its natural and cultural specifics. This region has strongly marked the history of Morocco. According to Mattingly et al. [2], this region has been a hub of trans-Saharan traffic and a privileged place for trade and the spread of culture and religion between Morocco, and sub-Saharan Africa. The Imghranes Region has always aroused great interest among researchers from the disciplines of Earth Sciences or Human Sciences, geologists, paleontologists, archeologists, and historians who have worked there have made spectacular discoveries, each in their discipline. Despite this glorious past, and its paleontological and archaeological riches, the region has remained on the margins of human and social development projects. The region as a whole has not been able to take advantage of its natural and cultural assets or benefit from the impact of research that has been undertaken in the past territory. Results of this work should be made available to the public authorities and developers to apply them in the realization of a geopark in this region. Moreover, the region has been experiencing a significant influx of tourists for a few years. The time has come to channel an incursion into employment-generating projects where the socio-economic impact will benefit local populations.

The Moroccan rock heritage is very rich; it constitutes more than three hundred sites of which 92% are sites of rock engravings and 8% of paintings in rock shelters [3]. These sites present for the visitors an open-air museum. In general, the geographical distribution of the rock art sites in Morocco reflects an ecological and landscape evolution of the settlements of pre and protohistoric human communities. Thus, in the Imghranes Region, cultural heritage sites are inherent to the pastures of medium and high altitudes. South of the Anti-Atlas and in the arid zone of Morocco, rock art has developed along the ancient rivers and on the topographic corridors that intersect them. Despite its historical, scientific, and patrimonial importance, Moroccan rock art remains little known to the general public and many rock sites are subject to destruction and plunder.

Because of this, it is our responsibility to contribute to the knowledge and protection of rock art documentation. Rock art is a powerful links between our country, our past, and our people “Archeology is our Heritage” [4].

Strategic patrimonial, legal, commercial, scientific, and cultural choices, as well as management choices, are made by the Delegation for Ministry of Culture. This Ministry has a unity of vision to maintain and conserve the legacy of ancestors to ensure that future generations will benefit from the knowledge, interpretation, and hence significance of the rock engravings and paintings. Vision sharing is a strategic act. It supposes the existence of a space for sharing points of view, methods for selecting choices, and processes for controlling their implementation and means. The region has a large number of pre-historic sites including Neolithic burial mounds (A more complex and monumental burial structure than the cist. Often, this superstructure of stones on top of the cist within a transonic aspect is either piled up irregularly on showing certain proportions. Apart from simple burial mounds, there is a great complexity of collective burial mounds, which may contain tens of individuals situated in pits located on different concentric rings with a central cist) or necropolis (An area reserved for burying and honoring the dead belonging to a human group) and other rock art sites.

2 GEOTOURISM: DEFINITIONS AND ISSUES

On the subject of geotourism, one can find many papers about the definition, and history of geotourism [5]. In a world where marketing and economical pressure reign supreme, we forget that the true cultural wealth of a nation is measured by its level of knowledge, and more significantly it's ancestral passed on through memory. Geotourism is considered a set of practices, infrastructures, and products aimed at promoting the Earth Sciences through tourism. In addition to that geotourism is a segment of sustainable tourism that is becoming increasingly interesting on a global scale (see references cited in [6]). Based on the study and interpretation of landscapes and forms of abiotic nature, it has opened up original opportunities to renovate the tourism industry and expand its proposition. For example, the UNESCO Global Geoparks (UGGps) are territories aiming to protect the natural and cultural environment and support sustainable development through education, conservation, and geotourism [7]. When new destinations are discovered as a result of the expansion and workings of geotourism, these findings offer sustainable development of territorial resources and allow the implementation of such sustainable expansion, particularly in isolated and marginalized areas. Arid and semi-arid environments represent interesting areas for understanding geotourism. The unique geosites they embody are of greater specificity. They testify to the evolution of the forms and processes of the surface of the Earth, during the period of more than 4.6 billion years. As such, they are of great interest as they contribute to the reconstruction of the paleogeography and paleoclimats of these sections of the Earth. Undoubtedly, to be a specialist in geotourism in the 2019s requires knowledge of regional geology, archaeology, geography, structural geology, paleontology, and petrology in addition to the skills listed above.

3 RESULTS

Today the understanding of the Imghranes area improves as and when the research takes place, legitimizing the rapprochement to places maintaining all forms of proximity. It is clear from this brief chapter that the enrichment resulting from friction with others is reflected at many levels: scientific understanding, management of a fragile site, marketing, welcoming the public, conducting visits, and integrating technological innovations (see Table. 1). A discussion of which has been given elsewhere.

Table 1. From heritage to tourism: leverage factors

| The territory | The time | Uses | Decision |
|---|--|---|--|
| <ul style="list-style-type: none"> - Strategic Vision of Exercise Territory. - Opening to others. - Willingness to share. - Fluency in languages. | <ul style="list-style-type: none"> - Coordination. - The chain of development of a heritage. - Focus on sources of knowledge sharing. - Optimization and sharing of acquired knowledge. - Simultaneity and parallelism on the totality. | <ul style="list-style-type: none"> - Accessibility at all times, at all modes, at all stages of the operation of a site. - Calibration of investments and economic models. - Taking into account the variability of uses. - Varied uses, differentiated according to the methods of interpretation. | <ul style="list-style-type: none"> - A space for discussion and strategic decision. - A shared strategic vision. - Stakeholders to defined missions. - The control procedures. - A definition of daily management. - Resources and / or the power to produce them. |

Imghranes wadi represents the fundamental water resource of the region. Hydrology is conditioned by climatic factors and is thus characterized by a great inter-annual irregularity and a very contrasting annual regime, with sudden flashes and prolonged very low flows. On the other hand, the plain flow is directly related to the position of the latter concerning the relief units. Today the future of the oasis is in doubt due to some factors: isolation from major centers of the country, a long-term drought that began in the early 1980s, and the subsequent out-migration of many working-age males. There are few “endogenous” agricultural development modes independently innovated by the farmers, and the agricultural modes remain dominated by the traditional ones [8].

In addition, to sustain the economic development of the site, the tourist development of this archaeological heritage cannot be realized without taking into account the fragility of the site and its images. This may be the only way to ensure their preservation and presentation for future generations. Solidarity tourism emphasizes the appreciation of the local culture and learning about its ways. The tourist lives for a short time with a local family and agrees to follow the local cultural norms and standards. The major obstacle to this kind of tourism within that the local society in the Imghranes Region is that it is very conservative.

Relatively little is known about the origin and history of the date palm. In Algeria, in Oued Djerat, its culture is attested by cave paintings of the caballine period which is 3200 BP years. For Camps [9], even though the date palm appears on the Carthaginian coins, its diffusion would have been progressive from the Nile valley or Mesopotamia. Despite the current upheavals of the oases, palm trees remain a strong symbol of the Moslem civilization and are considered the basis of sustainable agriculture.

Furthermore, the flora of the Imghranes area consists of *Traganum nudatum*, *Rantherium adpressum*, *Aristida pungens*, *Retama retam*, *Zygophyllum album*, *Tamarix aphylla*, *Carnulaca monocantha*, and *Limoniastrum guyonianum* (identification by co-author A. Ezaidi). Ecologically, the valorization of local produce is often the best guarantee of preserving natural resources, as soon as local populations become aware that the economic potential of their land depends on the sustainable management of a fragile resource [10] (Fig. 1). Agriculture is still one of the main local occupations but it becomes harder and harder to support families on agricultural income. Eco-organic agriculture is a type of ecological agriculture to ensure the quality of cultivated land and crops and provides high-quality health benefits of organic products. The development of large palm groves for ecotourism is beneficial to sustaining these communities.

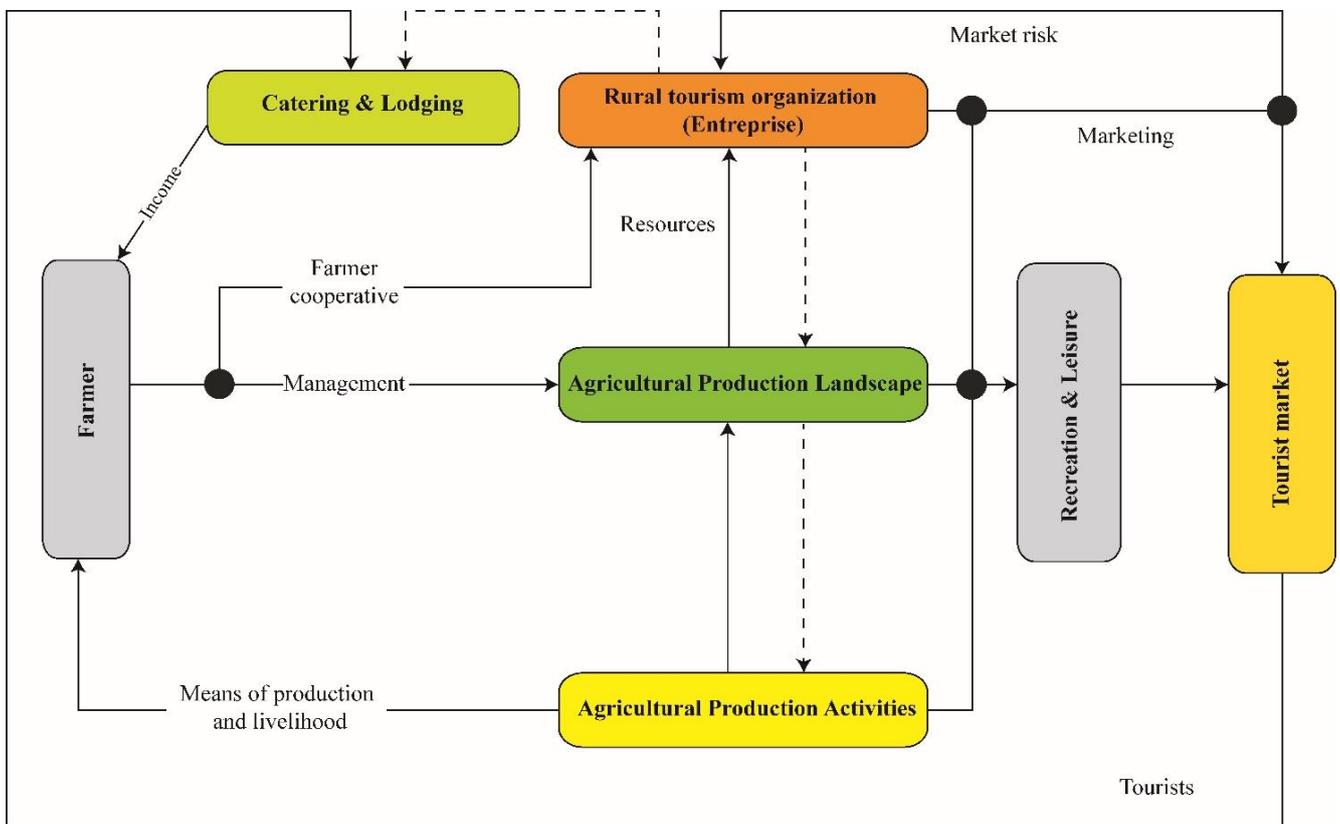


Fig. 1. The industry chain of rural tourism and agricultural production in composite development mode (modified from Dai et al. [10])

In the Imghranes area, plant life is an especially sensitive element of the physical environment. Any degradation of the general conditions of the environment can be fatal to it and directly influence the continuation of the pastoral probabilities of plants and thus economic growth in farming. It will also reduce the plant cover that forms a shield against the processes of erosion of soils. The analysis of plant formations thus makes it possible to determine the state of regression experienced by the ecological conditions of the region.

In developing countries facing the double challenge of poverty and the sustainable use of resources, resource development is emerging as one of the most appropriate strategies to contribute to the sustainable development of rural areas [11]. The valuation of the ecosystems or some of their components: biodiversity, geodiversity, and extractable resources, would provide possible solutions to economic problems. The development of tourism has been the subject of increasing reflection for several years; the main reason is linked to the fact that the tourism sector is one of the first export products of the least developed countries and is also responsive to the principles of sustainable development.

Indeed, the theory of responsible tourism is built around a virtuous conception between economic development; and environmental protection, particularly when tourism is associated with a community management system. However, due to the multiplicity of decision-makers or interest groups involved in the development, as well as the diverse and sometimes contradictory nature of goals and objectives, tourism development and the underlying processes call for a careful reading of this activity; and the reference to a single tourist model proves impossible. This idyllic vision of tourism is now at the center of discussions in the academic literature, which emphasizes the virtuous nature of tourism and a convergence of views and actions of different stakeholders. In other words, the existence of a virtuous tourist model requires a reflection on the coordination modalities of the stakeholders who have at times different ideals, and on key variables that make it impossible to converge them. A global, though not exclusive, an association between economic recovery and geotourism is widely acknowledged.

4 CONCLUSION

In terms of archaeology and prehistory, Morocco has an important international scientific succession of key sites for studies and correlations at global, regional, and local levels. This knowledge has remained more or less limited to the scientific community, although it represents an extremely valuable natural heritage in the development of geotourism on multilevel. The scientific mediator must have a certain amount of authentic scientific knowledge that enables him to present the subject of his intervention in a simple, convincing, and erudite way. Its role also lies in highlighting and presenting an awareness and respect for the preservation of the scientific heritage. It is therefore necessary for the mediator to popularize the knowledge within the context of the scientific knowledge; this would involve understanding the contexts and the best strategies to promote it, preserve it and exploit it in terms of geotourism and geoeducation [12, 13].

Overall, in the case of the Imghranes Region, the factors need to be explored to make this heritage site accessible to tourism in the respect of a sustainable economy. The production of its resources confers the choice of exploitation and to what degree the site may be utilized sustainably. The manifestation of such decisive expedites in our example will facilitate the implementation of the development strategy. However, the factors that determine the accessibility of heritage to tourism are here combined. Factors such as territory, time, use, and decision authorize a place, a site, to be suitable as a space of patrimonial character to welcome visitors [14]. The example illustrates the importance of the effect of these factors to "give body" to tourism development. Visitors who choose a heritage destination do not doubt for a moment "there is something to see". In this sense, the scientific and cultural project attached to a place of heritage and culture, the absence of which would be unimaginable at the risk of disqualifying the region itself, would be worthy of 'seeing' and acceptable to public demand, and be viewed as a project of holistic design. The example of the Imghranes Region is only sustainable if it is simultaneous with the quest for economic solidity, managed with equilibrium in the scientific continuum. The re-staging of geotourism, ecotourism, geoeducation, and cultural tourism as tools of sustainable development, allows us to recall the successful use in the scientific endeavor of these principles in the first place. Development with a focus on these principles should at all times engage the three components: the environment, the society, and economics.

In line with past research, tourism is universally considered an activity specifically reserved for humans. Geopark is the 21st-century solution for regional sustainability. We need both, material and global solutions. As discussed in the section results, the archeological approach for promotion of a high-quality geotourism experience in the Imghranes Region is an authentic way to promote geoconservation, geohistory, and geo-interpretation [6]. Imghranes Region thus constitutes a high place of memory and traditional secular scripture. So its preservation, protection, and enhancement are now essential. Moreover, because of these patrimonial potentialities, the site lends itself perfectly to an outdoor museum. The planning of such a museum will house a permanent exhibition and a reception and information structure.

To summarize, tourist activity remains closely linked to the natural and cultural potential of the Imghranes Region. Many tourists consider natural environments to be a very important part of their holiday scenery, and their geological, geomorphological, and archaeological features make it possible to practice activities closely related to nature. In the same way, the cultural aspects of the indigenous populations arouse more and more curiosity of tourists. Developing tourism based on natural and cultural heritage requires above all knowledge and a valuation of it [15].

In this sense, final recommendations for future directions and the following concluding remarks have been outlined in this study:

- a. Several options have been pursued including the possibility of establishing a geo-archaeological museum, public education as well as meetings with key government officials,
- b. To build a database of geological and archaeological sites of scientific interest and,
- c. Calling for the development of legislation that puts the force of the law into the protection of geologically and archaeologically significant sites.

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REFERENCES

- [1] Richter, D., Grün, R., Joannes-Boyau, R., Steele, T. E., Amani, F., Rué, M., Fernandes, P., Raynal, J.P., Geraads, D., Ben-Ncer, A., Hublin, J.J., & McPherron, S.P. (2017). The age of the hominin fossils from Jebel Irhoud, Morocco, and the origins of the Middle Stone Age. *Nature* 546: 293-296.
- [2] Mattingly, D.J., Bokbot, Y., Sterry, M., Cuénod, A., Fenwick, C., Gatto, M., Ray, N., Rayne, L., Janin, K., Lamb, A., Mugnai, N., & Nikolaus, J. (2017). Long-term History in a Moroccan Oasis Zone: The Middle Draa Project 2015. *Journal of African Archaeology* 15 (2): 141-172.
- [3] Lemjidi, A., Aouragh, H., & El Atmani, A. (2016). The rock art of Figuig and Ich (Eastern Morocco): new data. *Journal of Materials and Environmental Science* 7 (10): 3718-3739.
- [4] Taçon, P.S.C. (2019). Connecting between to the ancestors: why rock art is important for indigenous Australians and their well-being. *Rock Art Research* 36 (1): 5-14.
- [5] Hose, T.A. (2008). Towards a history of geotourism: definitions, antecedents and the future. In: C.V. Burek & C. Prosser (Eds), *The history of geoconservation*. Geological Society, London, Special Publication 300: 37-60.
- [6] Hose, T.A. (2012). 3G's for Modern Geotourism. *Geoheritage* 4: 7-24.
- [7] Fassoulas, C., Watanabe, M., Pavlova, I., Amorfini, A., Dellarole, E., & Dierickx, F. (2018). UNESCO Global Geoparks: living laboratories to mitigate natural induced disasters and strengthen communities' resilience. In: L. Antronico & F. Marincioni (Eds), *Natural Hazards and Disaster Risk Reduction Policies* (pp. 175-197). Rende: Geographies of the Anthropocene book series, Il Sileno Edizioni.
- [8] Lavie, E., & Marshall, A. (2017). *Oases and Globalisation: Ruptures and Continuities*. Cham: Springer.
- [9] Camps, G. (1974). *Les civilisations préhistoriques de l'Afrique du Nord et du Sahara*. Paris: Doin.
- [10] Dai, M., Zhang, J., Wang, L., & Su, W. (2016). Optimization of agricultural sustainable development mode in small karst basin in Southwest China. *Carsologica Sinica* 35: 84-92.
- [11] Obour, R., Ankomah, P., & Larson, T. (2017). Ecotourism Potential in Alleviating Rural Poverty: The Case of Kakum National Park in Ghana. *Athens Journal of Tourism* 4 (4): 263-282.
- [12] Abioui, M. (2016). Need for popularization in Geoscience: narrative and education. *ASRO Journal of Education* 1 (2): 15-17.
- [13] Abioui, M., M'Barki, L., Benssaou, M., Ezaidi, A., & El Kamali, N. (2019). Rock Art Conservation and Geotourism: A practical example from Foug Chenna engravings site, Morocco. *Geoconservation Research* 2 (1): 1-11.
- [14] Tiberghien, G., Bremner, H., & Simon, M. (2017). Performance and visitors' perception of authenticity in eco-cultural tourism. *Tourism Geographies* 19 (2): 287-300.
- [15] Amodio, T. (2019). Cultural Heritage and Collective Knowledge. In: K. Koutsopoulos, R. de Miguel González & K. Donert (Eds), *Geospatial Challenges in the 21st Century*. Key Challenges in Geography (EUROGEO Book Series). Cham: Springer.