



IDENTIFICATION OF NEW ICONIC OBJECTS FOR THE SUSTAINABLE DEVELOPMENT OF HERGLA (TUNISIA)

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Abstract:

This paper discusses the issue of territorial identity by facing globalization in Hergla's delegation. In order to requalify the “image of the city”, amulticriteria analysis of the landscape units of the “El Medfoun” forest and the Sebkhah “Halk El Menjel” has been developed to detect symbol indices of change for a new “territorial landscaping”. These natural areas were identified as new iconic objects. Indeed, the Sebkhah and the forest, carrying ecological, patrimonial, social and economic values, may be integrated into a territorial project, through of landscape geomeditation practices. These values are considered as identity factors for the sustainable development of Hergla delegation.

Keywords: El Medfoun Forest; Sebkhahalk El Menjel; Iconic Objects; Territorial Identity; Landscape Geomeditation.

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1. Introduction

Globalization, the acceleration of urbanization, the revolution in means of communication and the resulting social changes are the issues raised in the analysis of contemporary territorial dynamics [5].

Technological innovation of the twentieth century facilitated the intensification of economic, cultural, political, social and demographic flows and exchanges between cities [1]. Urban areas have undergone radical changes to become communication nodes of these flows [5].

As a progressive standardization phenomenon of an exchange space [13], globalization has a huge impact on urban landscapes, culture, quality of life and societies [5]. More often, international models of urban planning have emerged [15] and have removed the diversity of landscapes and lifestyles and, consequently, the landscape identity [24].

According to Donadieu and Rejeb[15], "this concept expresses both the character of what is similar and distinct, and what is different from another landscape". The perceptible character (attribute) of a landscape makes it unique and specific [24]and justifies its protection [15].

The search for the characters that identify the territory landscape is a retreat in the face of globalization [24] and the resulting transformations of space (changes in land cover/use, new human activities, etc.). In a world where image is considered as an attraction factor and an added value to the territory [23], many cities develop strategies to reinforce their competitiveness [5] and to distinguish themselves from others, by identifying its distinctive features and attributes [23]. "Urban icons" are representative images of places and objects that symbolize a city and enhance its landscape identity [21]. The generalization of the means of communication, particularly via Internet, can contribute to the creation of "new territorial images", with emphasis on local territorial determinants taking advantage of the typical buildings of the region and the richness of the natural environment [19].

Moreover, the geographical position of coastal cities represents the principal factor of making them the interface of maritime exchanges and the areas of traffic flows and port activities [5]; which contributes to its economic development and its attractiveness.

This is the case of the Tunisian coastal cities, which are experiencing a landscape change marked by an intensive urbanization [2] at the expense of natural and agricultural areas. In fact, 70.7% of the population is concentrated in the coastal agglomerations [11]. This process of urbanization, named the "coastalization" [2], is a consequence of the tourism development policy of the State since 1970 [15].

Despite the rural and natural character of Hergla (90% of the delegation's area is agricultural and natural land [7]), little attention has been paid to the transitions between the urban center and its suburban environment [6, 19]. Natural sites have been marginalized in the planning of the Development Master Plan of the sensitive area "Bouficha-Enfidha-Hergla" (2010) in long-term 2030 with little concern for their preservation. The degradation of landscapes by the sprawl of natural and agricultural areas, the occupation of coastal areas, the erosion of protected natural areas and, also, the archaeological damage due to the extension of urban areas have led to a loss of the landscape identity of the region [24] aggravated by the regression of tourism in Tunisia.

Given this situation, a search for the creation of a new territorial dynamic favoring the revitalization of the coastal zone is needed [23]. The objective of this study is to recognize the natural sites of Hergla as "iconic objects" to rebuild its image and to enhance its landscape identity.

2. Materials and Methods

This paper postulates the hypothesis that the landscape of natural sites can be a means of their qualification as iconic objects of the territory. For this, a methodological approach, based on two landscape units in the Tunisian coastal delegation of Hergla, is proposed.

2.1. Territory of Study: The City of Hergla

We are interested in this study at the delegation of Hergla for the peculiarity of its site and the diversity of its natural environments and its landscapes witnesses off the cultural past and the rich heritage of the region. Hergla is located on the Tunisian coastline north of the governorate of Sousse (Figure 1), it is perched atop a cliff of over 75m, overlooking the sea to the east [12]. To

the north, extends the immense forest El Medfoun and the Sabkha Assat Djriba. At the southwest, Hergla is bordered by the Sabkha Halk El Menjel and to the west by farmland.

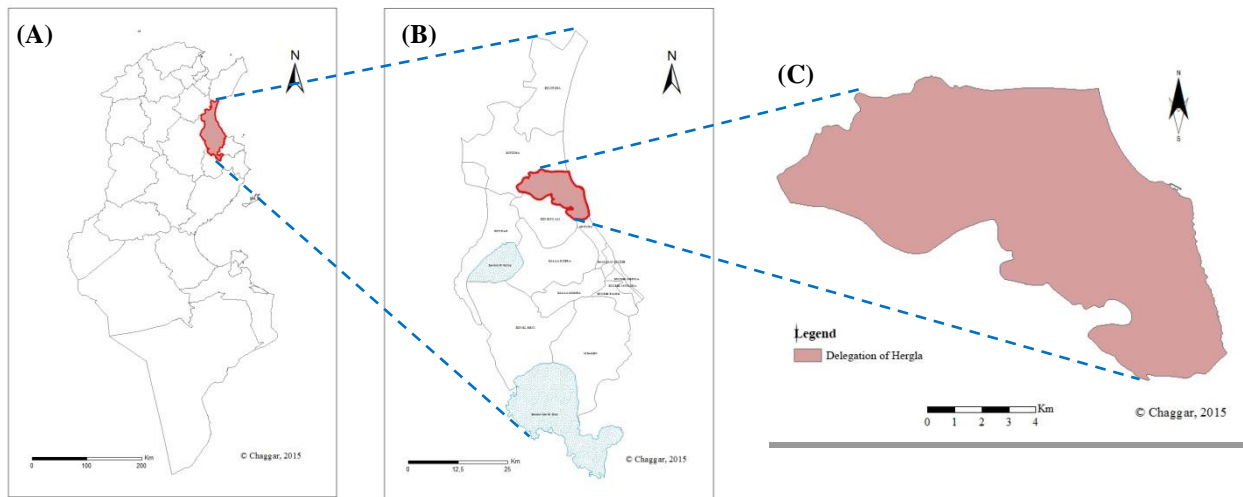


Figure 1: Situation of the delegation of Hergla

(A) National Geographic Context (B) Regional Geographic Context (C) Geographical limits of delegation (Chaggar, 2015; DGF Tunis, 2010)




The geographical localization of this delegation, covering an area of 96.71 km², between the tourist areas of Sousse and Hammamet has oriented its economic and social development towards tourism [6, 12]. This situation has accelerated the urbanization process in recent years: the urban patch has increased from 2% in 1990 to 10% in 2016 [7] causing important landscape changes.

Thus, the city of Hergla is characterized by a landscape diversity marked by its architecture and its archaeological and cultural heritage [6] (Figure 2).

Indeed, this Punic city was a commercial port in Roman period known as "HorreaCaelia" (Storehouses of Rome [18, 4]. Today, Hergla still retains traces of the Aghlabid era, a witness of the Arabo-Muslim architectural imprint (Old town center). It has so far preserved the charm of a territory crossed by history.

Besides the archaeological heritage, the cultural landscape of Hergla is characterized by the "alfa" craftsmanship. The Hergla's citizens have been specialized in the manufacture of alfa mats ("Chamya"). According to the inhabitants of Hergla (interviews made in 2015, this hereditary know-how is declining today because of the appearance of mechanical mills, the high cost of the raw material and the social changes (abandonment of young people of this activity) [6].

Table 1: The diversity of the urban landscape in Hergla (taken December 2014 and February 2015)

Urban landscape (Chaggar, 02/2015)	Authentic architecture	
	Urban sprawl	
Archaeological heritage (Roman remains) (Chaggar, 12/2014)	heritage (Roman remains)	
Cultural craftsmanship (Chaggar, 12/2014)	heritage (“alfa”)	

2.2. Study Objects: Natural Sites

This research focuses on the two natural sites, the Sebkhahalk el Menjel and the forest El Medfoun, for their sensitive character and their importance in the Hergla territory (Figure 2)

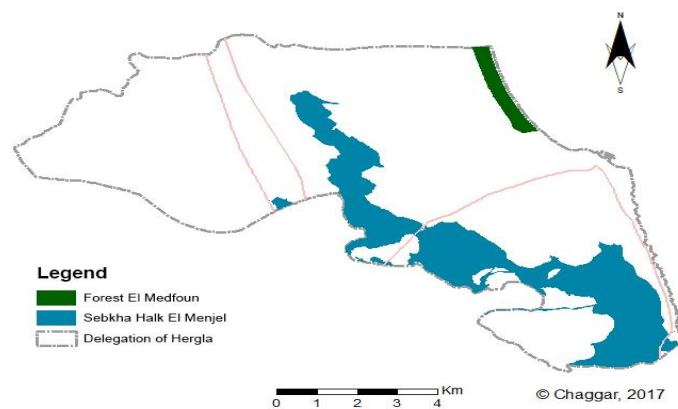


Figure 2: Map of the landscape units of El Medfoun forest and SabkhaHalk El Menjel

Located 25km north of the city of Sousse and south of the delegation of Hergla, Halk El Menjellagoon was classified as a RAMSAR site on February02, 2012 (TN017). It is also classified as a national sensitive coastal wetland. Its area is approximately 1450 ha (2050 ha during wet periods) and its depth varies from 0.5 to 1 m. The Sebkhha is fed by OuedEssod (in the South West) with an outlet to the Sea (South East). It is divided into two parts, a part to the north where the water is periodic and a part to the south where the water is permanent (Figure 3). This segmentation is due to the road between SidiBou Ali and Hergla (100 m long), which cuts the water exchange between the two parties.



Figure 3: Photo de la Sebkhha Halk El Menjel (prise de vue avril 2015)

El Medfoun Forest extends over 21km along the coastline (between Hergla and Salloum south of Hammamet), of which 11km are part of the Hergla delegation with an average width of 600 m (Figure 5). The forest has been wooded since 1967 mainly in Acacia and Eucalyptus (according to the Coastal Protection and Development Agency of Sousse) to fix the littoral dunes against wind erosion (Figure 4).



Figure 4: El Medfoun Forest landscape (A) Sand Dunes (B) Acacia Cyanophylla Forest

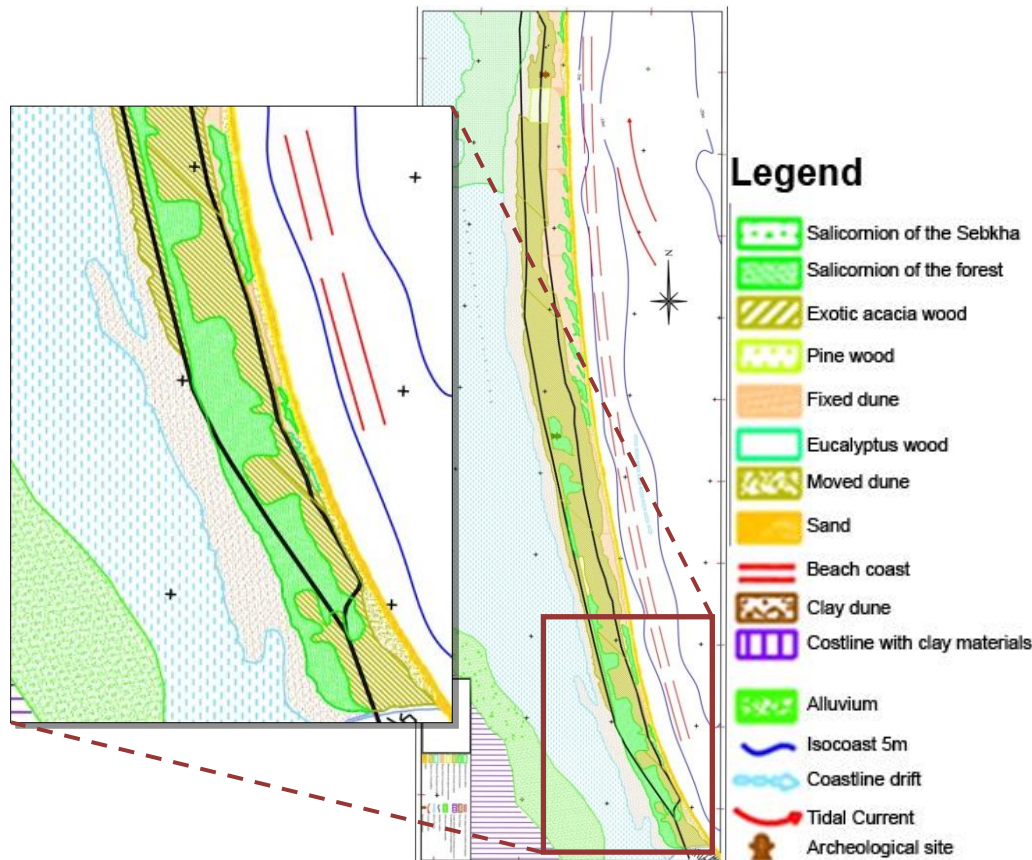


Figure 5: Maps of El Medfoun Forest. (6bis) The forest area belonging to the Hergla delegation (source: Coastal Protection and Development Agency Sousse)

2.3. Multicriteria Analysis

Multi-Criteria analysis is a decision-making tool developed to value the relative importance of all indicators involved in the study site and reflect this importance in the decision-making process [20]. This analysis examines the indicators of natural areas in relation to the environmental, social and economic principles of sustainable development.

The application of this analysis allows integrating natural areas in territorial planning projects to decrease the landscape degradation of the city. This analysis should promote, in particular, the forest El Medfoun and the SebkhahalkEl Menjel as objects needed to build a new image of Hergla.

2.4. New Territorial Landscaping

Everyone can be convinced that universal models are the most rational solutions for housing and feeding the inhabitants of a territory. However, he must admit that these living environments often lack the perceptible qualities desired by the inhabitants [9]. At this level, the "new landscaping" comes to describe the character of an environment and to attribute to it an identity to the landscape. The characteristics attached to the natural areas can be considered as "identity factors" or factors of attachment to the places. The "new landscaping" is based on the "already there" and the recognized [15]. It can target the potentials of the place by asking actors to translate the values of

sustainable development locally at the identified sites. The values that mark a territory like Hergla are considered by the populations as sharing benefits. They mark the territorial affiliation of the inhabitants [21].

In this context of collective commitment to the principles of sustainable development, landscaping opens up to new goals of quality of life but also of environment preservation, because the social and political demand has led to new territorial reflections [22]. The likes of citizens are turning to more wild environments rich in fauna and flora (nature observers, hikers, etc.).

However, the projects planned in the Development Master Plan of the sensitive area "Bouficha-Enfidha-Hergla" (2010) in long-term 2030 represent a disturbing planning given their negative impacts that are emerging on the El Medfoun forest (the tourist resort and the deep-water port) and the Sebkhahalk El Menjel (the Enfidha airport and the new urban extensions).

Based particularly on cultural, ecological and economic values, "landscaping mediation" through space intervention (geomeditation) exceeds the divide between nature and culture and between city and non-city. The territories and their environments are thought of as qualified landscapes and can become desirable spaces for inhabitants and users. Thus, the landscape project is not done for the only contemplation of the sites but includes the preservation of biodiversity, the prevention of the degradation risks (natural and/or anthropogenic), and the declination of the objectives of sustainable development. It takes shape in creativity, dialogue, communication, etc. and matches the landscape units with features and uses to be installed or preserved.

3. Results and Discussions

3.1. Values of Natural Sites

Natural sites are an integral part of the territorial heritage, as are architecture and other men's productions. They represent an asset and a resource for the community through their ecosystem services, contributing in the well-being of society. They always remain the indispensable support for the economic and social development of the territories [10].

From an environmental standpoint, Hergla's natural sites contain specific ecosystems and provide an ecological balance in the region. Indeed, the coastal forest El Medfoun, although it is wooded by man, has nowadays a rich biodiversity (Acacia Cyanophylla, Eucalyptus, wild boar, Fox, Hare, Starling, Buzzard, etc.). It has an important role in reducing the risk of wind erosion, with the maintenance of sand dunes by trees.

As for the Sebkhahalk el Menjel, it is classified as a sensitive wetland for its ecological interest. It has a very important role in the hydrological balance of the region. It ensures the storage of the flood waters of OuedEssod and OuedMjinin and spills them at sea, in case of overflow of the lagoon, through a grau to the southeast [17]. The water permanence (in the south) attracts not only wintering birds (White Spatula), but also migratory and breeding bird species (Pink Flamingo, Ash Crane, Tern), as well as a bird species listed in the World Red List "Small-billed Curlew" (*Numenius tenuirostris*). The Sebkhahalk is also a spawning and feeding area for some species of fish (Mugil and Lisa).

It is for these reasons that the Sebkhahalk El Menjel has been classified as a RAMSAR wetland since 2012 (TN017) for criteria 1, 2, 4, 6 and 8

From a heritage point of view, the natural sites of Hergla are rich in history and mark the passage of several civilizations, since prehistory. Indeed, the coastline of Hergla dates from the Quaternary age. The formation of the lagoon Halk El Menjel has begun since 100 000 years BP (Before Present), after two marine invasions and the formation of two "Rejiches" (Figure 6). The discovery of a prehistoric industry site on the edge of the Sebkhahalk by Mrs. Riahi[3] confirms the existence of the lagoon until at least 3500 years BP, which testifies to the fact that prehistoric men lived in this area at that time. The surrounding area of the Sebkhahalk includes various archaeological sites such as the Christian Basilica (Figure 8. A). Roman remains are also identified in the El Medfoun forest through the mosaics of a Roman villa and the ancient Roman road that connects Hadrumet to Carthage (Figure 7.B and 7.C). These heritage characters reflect the important cultural value of these natural sites.

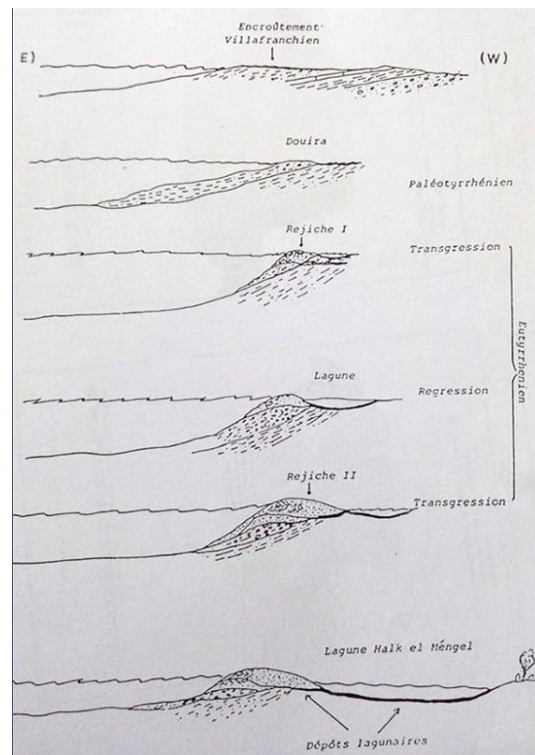


Figure 6: Genesis of the Halk El Menjel Lagoon [3]



Figure 7: Archaeological sites near the Sebkhahalk El Menjel in the El Medfoun forest (A) Christian basilica (B) Roman road (C) Mosaic of a Roman villa (shots in December 2014)

As far as society is concerned, the natural sites of Hergla contribute to its harmony and to the improvement of the quality of its living environment [10]. The forest and the Sebkhahalk play a training and research role; they are a destination for different categories of people nationally and internationally. Indeed, they are places of learning, discovery, study and research for students, archaeologists, birdwatchers and scientists in general.

They are likewise a source of inspiration for artists. A multitude of painters, sculptors, photographers, actors, scriptwriters, magnify the beauties of Hergla’s nature virgin and peaceful. Moreover, the quality of the natural heritage and landscapes of the Sebkhahalk and the forest has an important role in the attractiveness of Hergla’s territory. The latter is a tourist destination, especially in summer (El Medfoun forest beach). In addition, the fishing activity (in the Sebkhahalk El Menjel) and the hunting activity of the wild boar (Figure 8), controlled and organized by the General Directorate of Forests (GDF) and the Coastal Protection and Management Agency (CPMA), in the El Medfoun forest, are practiced too promote the economy of the region.



Figure 8: Wild boar hunting in the El Medfoun forest (shot in January 2015)

Thus, these landscape units, near anthropogenic spaces, improve the quality of urban landscapes by offering free space and limiting social tensions. The ecological, patrimonial, social and economic values identified in the El Medfoun forest and the Sebkhahalk El Menjel (Table 2) help to argue the importance of these landscape units in the marking of the Hergla’s identity and the construction of its new image on a national and global scale. This identification action must be integrated into a landscape geomeditation process that will recognize these natural sites as iconic objects of the city.

Table 2: The characters of the natural sites of the Sebkhahalk El Menjel and the El Medfoun forest

Values	Sebkhahalk El Menjel	Forest El Madfoun
Ecological	Hydrological balance RAMSAR Site (02/02/2012)	Rich biodiversity Reducing risk of erosion
Heritage	Lagoon of the Quaternary Age (100000 BP) Prehistoric Site industry (3500 years BP)	Roman remains (Roman road to Carthage, villa, mosaic)

Social	Quality living environment Places of learning, discovery, scientific research, ... Source of artistic inspiration Places of relaxation	
Economic	Fishing	Hunting controlled by GDF and CPMA

3.2. Landscape Geomediation

The conservation of certain landscapes under their identity characters is one of the foundations of the protection policies of the remarkable natural sites, in the form of action to ensure the sustainability of a common good [22, 14]. Thus, geomediation is defined as a process of allocating landscape qualities to a territory, through a mediator (landscaper, ecologist, planner, etc.), based on a participatory democracy approach [15].

Participation is envisaged as an action research tool conceived with and for the territorial development actors (institutional bodies, local actors, inhabitants). Paradis and Lelli[22] propose a device for the engineering of local participation by the landscape to facilitate the transition from knowledge to recognition of landscape units, as a support for new action levers (Figure 9). This methodology tends to develop diversified local animation processes, enabling information, involvement and appropriation of knowledge, transforming the skills generated between scientists and professionals into territorial project.

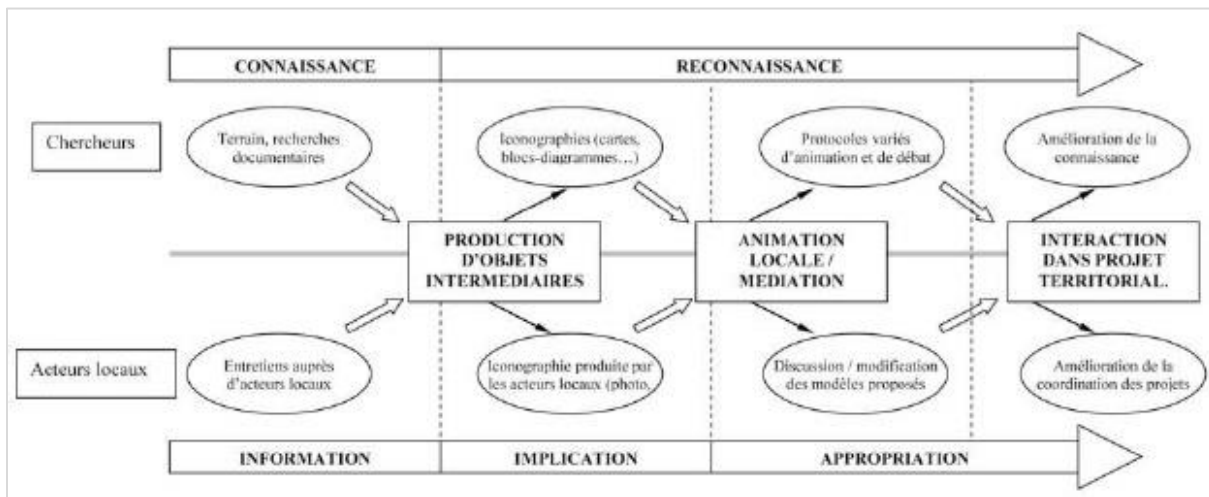


Figure 9: Methodological route of territorial animation [22]

This territorial project can be proposed in terms of leisure and relaxation activities. It can be tourism (green, cultural, ecological, etc.), outdoor sports, fishing and hunting, nearly leisure activities (walking, camping, etc.), nature-discovery, etc. The project can be also in terms of social insertion by nature which aims at reintegration experiences of fragile individuals in the working life, thanks to missions of maintenance of the natural environments. Thus, the biodiversity of the Sebkhia and the forest allows favoring a balanced approach, offering diverse activities to various audiences, while integrating the objective of nature and landscapes protection.

The landscaping geomeditation (conciliation, creation and animation) sets up socio-political mechanisms that allow the elaboration of public actions regulating the production of landscapes and natural places (Table 3). It is based on governance practices (social participation) conceived as instruments of reflection, knowledge, negotiation and open actions within territorial projects. Geomeditation also uses concerted intersectoral actions that mobilize the values of Hergla's sustainable development. Thus, the "new landscaping" is based on innovation, invention, creativity, transcultural and multi-sensory [15] while implementing the characters of natural sites holders of territorial identity. Therefore, the project evolves and follows the dynamics of the landscapes thanks to the participation of the society and their involvement in each stage of the project. It aims, with the ecological, social, cultural and economic characteristics of natural sites, to provide the inhabitants and users with the necessary goods and services, while preserving them in the long term.

Table 3. The principles of geomeditation landscaping applied to a project to promote natural sites in Hergla [15]

Principles	Criteria for landscape geomeditation
Action Frameworks	Territory, society, culture, politics
Landscape projects	Social, governance
Project objectives	Territorial development, quality living environment, concerted project, preserving natural sites
Characteristics of the projects	Polysensory, inventive, reflexive, transcultural, identity
Evaluation of public actions and projects	By the inhabitants and users
Dominant values	Identity, aesthetics, sustainability, well-being

4. Conclusion

In the face of its landscape degradation and the standardization of globalization, the search for a new image for the territory of Hergla, in order to its revitalization, required a thorough study of the characteristics of the environment to identify its values Identity. Indeed, the city is distinguished by its natural environments, the holders of the ecological, patrimonial, social and economic values of sustainable development. Thus, the selected landscape units, namely the El Medfoun forest and the Sebkhahalk El Menjel, are identified as iconic objects and identity factors of Hergla.

This paper differs from the standard analysis of natural sites as an economic resource and ecosystem living environment and provides a new approach to territorial planning. It allows recognizing these places as a symbol of change [19] of a new territorial landscaping (geomeditation) that promotes the new image of the city.

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