

# Territory and Landscape in the Mediterranean Environment

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The territory is the result of transforming the biophysical matrix. Socioeconomically advanced territories, also called developed, are always territories that have undergone a great transformation. But regardless of the intensity of this anthropic transformation, in other words, originated by human beings, the reality prior to the base matrix cannot be overlooked. This is an elementary fact but all too frequently forgotten. The knowledge and awareness of the possibilities and limitations of the biophysical matrix, as well as the environmental matrix from which it derives, is a major component of sustainable territorial management. Mediterranean territories are especially affected by this principle.

## Territory or Landscape?

The landscape is the appearance of the territory.<sup>1</sup> For a long time, the term “landscape” has had a purely scenographic meaning, almost without content other than its aesthetic references. The term “landscape” was used in the Latin sense of *locus amœnus*, rather than in that of *prospectus*. However, modern landscape sciences have radically changed this perception. Indeed, we now say that any fragment of territory, natural or intervened by human beings, makes up a landscape; that is, a set of physical and functional references, which can be considered as a phenomenon in itself. The landscape reflects the environmental reality of each place, while it condenses the history

of the anthropic process – that is, originated by man – which has been able to develop in it. Therefore, the concept “landscape” is, in fact, a socio-ecological algorithm.

The contemporary landscapes of most countries – in any case, of all industrialised countries – are constructed landscapes. The process began many centuries ago, through the transformations introduced by agricultural and stock-breeding activity. In this process of constructing the landscape we have recently reached very advanced levels through the dominant presence of buildings and infrastructures. The construction of the built landscape is a major element of modern socio-ecological reflection, but should not lead us to lose sight of the centuries-old process of non-building landscape construction

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1. This article features prior reflections by the author included in his book *La quimera del crecimiento*, Barcelona, RBA, 2011.

carried out by the traditional rural world and, currently, by industrial farming activity.

We speak tropical landscape or middle-European landscape knowing that these expressions embrace a great deal of climatic, edaphic – related to the soil – or geological, biological and anthropological information; that is, historical, agronomical, urban, social and political. Therefore, an expression such as “English landscape” is less frivolous than it may seem because it encompasses the middle-European and Atlantic climate, the plain-deciduous forests, the soft relief and the continuity of the vegetable cover, which means a limited risk of undesired water erosion and elevated forest and farming productivity. In other words, this is an extensive agriculture of non-irrigated herbaceous vegetables, fields enclosed by hedges, narrow boxed-in roads, little houses with gabled roofs and all the socioeconomic philosophy resulting from an ancestral form of exploitation of this space, with manors and foxhunting included. However, the current landscape sciences go beyond this re-reading of the literary terminology to construct an entire cognitive edifice allowing better interpretation of the territorial reality.

The perception that the population in general has of all this is rather confused and greatly depends on media fashions. Indeed, the mass media also act as prescribers of opinion in this domain. Studying which landscapes are exemplary and which are lamentable would deserve a separate study. Public opinion is formed based on these media standards, just as in other times literary standards were the great shapers of the collective imaginary. The desert has passed from being frightening to fascinating thanks to the cinema, while the hyper-northern frosts, which people fled from like the plague, have captivated more and more people since they have been associated with sparkling clothes and cosy evenings around the crackling of the fire. For many, the image of the landscape depends

on documentaries, films and advertisements. An exciting film about the epic process of constructing a high voltage line through impenetrable and hostile forests would change the perception of the electricity grid and its impact on the landscape. We could say the same about wind parks, if they were shown in imposing ground angle shots or turning Wagnerially in a golden crepuscular atmosphere. This already happened in the films that, in the 1950s and 1960s, exalted the oil rigs, the erupting derricks and the off-shore platforms.

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Behind the landscape is the territory. For traditional ecologists, and on the rebound also many environmentalists and conservationists, we humans have altered the territory and therefore have damaged the landscape. They confuse territory with territorial matrix, with biophysical matrix prior to the construction of the territory properly speaking. The territory of the ecologists is usually the territorial raw material of engineers and town planners. Therefore, ecology sees the destruction of nature where others see the construction of the territorial space.

### **Biophysical Matrix and Anthropic Transformation**

Spatially speaking, the territory must be understood as a mesh of phenomena, as a matrix of interconnected points and counterpoints. The meshes used in the computerised drawing to create simulations or three-dimensional constructions express this situation very well because, in short, they themselves are no more than a formal simplification of the architectural or territorial

reality they represent. This is particularly true in the Mediterranean basin in general, after three millennia of heavy anthropisation.

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Few territories are isotropic; that is, they have the same characteristics in all directions. Mediterranean territories are not at all isotropic. The relief, hydrography and climatic zones establish a base map with asymmetries that the anthropic transformations usually exalt. To start, we must consider orography and hydrography, which are correlative concepts. Waters flow along the lines of maximum slope and generate rivers that excavate valleys, which consolidate and exalt these slopes of maximum significance. Fluvial action, depending on more or less considerable and more or less irregular pluviometries, increases the orographic force: the more easily erodible the substrates, the greater the increase. In not very mountainous places, the waters have little potential energy and excavate relatively modest valleys, while in places of powerful orography, the fluvial action enhances the unevenness of the relief even more.

The geological substrate also has a major role in determining the physical matrix of a territory. The base geology, as well as the so-called superficial formations – the emerging material, transformed by the weathering action of the atmosphere and by the erosive phenomena –, condition the mechanical behaviour of the substrate and the soil forming process. A hypothetical heterogeneity in the arrangement of this substrate and these formations increases the anisotropy of the matrix. This is exactly the case in the Mediterranean, where geological materials of very diverse characteristics emerge.

Geological and geomorphological anisotropy usually brings about bioclimatic anisotropy.

Indeed, the latitudinal climatic zoning is affected by altitudinal variations. Thus, climbing a mountain is the equivalent, to a certain extent, of ascending to the north. Hypsometrical differences are very important in the Mediterranean basin, with sea level differences of thousands of metres between the coastline and some peaks located close to the littoral, and thus bioclimatic variations are accentuated in this area. The milder action of the sea is also affected by these variations, given its enormous thermal inertia and the generation of specific meteorological phenomena (mists, maritime airs, south-west winds, etc.) of great local importance. In short, the Mediterranean has a marked territorial anisotropy. Logically, this would demand a differentiated territorial management; that is, appropriate at each specific set of circumstances. Unfortunately, this is not usually the case.

Transformations affect built-up areas in a particularly evident way, but free spaces have also been influenced by them. The whole agricultural space is an example of this, both because of the morphological reshaping (terracing, plots, paths, irrigation channels, etc.), and the strictly agronomic reshaping (ploughing and subsequent extension of crops). But the forest and livestock space has also been highly transformed, to the point that most Mediterranean pasturelands or forests are actually secondary formations; that is, communities made up of more or less spontaneous species, but maintained – in terms of structure and floristic composition, and with the objective of ensuring greater productivity – in phases removed from the final potentiality of the biophysical matrix.

The final result is a Mediterranean landscape of a pointillist structure, a kind of more or less pixelated mosaic that blurs the outlines of the logic of the initial matrix, impeding the development of the corresponding latitudinal succession, in principle for macroclimatic rea-

sons. At this point, the temptation to believe that the anthropic transformation has made it possible to disregard the biophysical determinants besieges the casual observer. But this pixelated appearance of the Mediterranean territories, so anthropised, must not prevent us from seeing the underlying biophysical matrix, which always determines the transformation options which we may take subsequently. In this way, in humanised Mediterranean areas – which are the majority –, a second equally anisotropic phase is superimposed over the anisotropy of the matrix. The intersection of the two layers configures the Mediterranean territorial landscape just as we see it today.

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This anisotropic mesh has knots and inter-nodal segments, comparable to a fishing net. The knots would be the points with greater concentration of diversity; that is, the places where the phenomena of each layer are exalted when coinciding in space. They are the zones with most territorial significance and greater landscape interest, and often also of greatest scenic value. The alternation of points and segments confers a great variety on the territory, while it possesses latent potentialities to reform the mesh if necessary.

The conservation of the intersection mesh between the biophysical matrix and the layer of anthropic interventions is a guarantee of territorial stability, as all the elements at play and the result of combining them are present in relatively small spaces. Thus, interfaces and small local breaks in continuity are established,

which are very interesting in terms of territorial sustainability. Ensuring that this richness of anthropic origin is not lost is no lesser objective, in terms of sustainability.

The systemic vision of the territory involves abandoning the processes of mere juxtaposition of the systems (urban, productive, communications, energy...), which brings a new strategic and planning vision of the flows, relations, edges and superpositions. The nets are discontinuous, while the matrix is continuous; moreover, each of the territorial subsystems does not generate neutral effects, either over the other subsystems or the environmental matrix. In short, the sectorialisation of the strategies and planning, although it is possibly an unsolvable methodological necessity, must be approached from a relational point of view to be effective.

Ignorance of all this has led us to deplorable urban processes that, in recent decades, have seriously deteriorated the Mediterranean landscape and the territory, particularly in coastal zones, full of non-urban artefacts. These are the exact opposite of distant territories, little or not at all anthropised, which are offered as a practically pure biophysical matrix. This would be the case of the Patagonian littoral, for example, which is not well conserved but rather simply untouched. If the English coast is well conserved, it is certainly partly because it is almost untouched if compared with the Mediterranean but above all because its partial transformation has followed reasonably intelligent urban strategies. Something similar could be said about the Tuscan or Dutch territory, for example. Both are highly transformed but physiologically solid spaces, without great dysfunctions. The Dutch territory is not only a practically invented territory<sup>2</sup> but contra-

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2. I refer, of course, to Holland strictly speaking (northern Holland and southern Holland), Zeeland, Flevoland and Freesia; that is, the eastern half of the Low Countries (Netherlands) which are below sea level, built using dykes, polders and constant drainage and pumping (most of the Dutch windmills were actually pumps).

dicts its root biophysical matrix. However, it is a paradigm of good environmental practices, simply because they correspond to well thought out and skilful farming and urban plans.

Urbanising the territory does not mean filling it with constructions, but almost the contrary. Urban planning consists of determining what goes where and for what, as long as this “where” allows it and this “for what” responds to a civil purpose of general interest and this “what” has quality and meaning. In fact, the space – biophysical matrix – does not become territory until it is urbanised; that is, until it is the object of civil appropriation. All this is far removed from that miserable narrow-minded pseudo-urbanism whose only objective is to classify land for speculative purposes. Urban development plans the territory and constructs the environmental matrix. Territorial de-structuring and an environmental deterioration result from spatial occupation without serious urban planning guidelines.

## Landscape as a Project

All this advises planning the environmental matrix; that is, deliberately shaping it, instead of waiting for it to take shape at random. The bioclimatic, geomorphological, hydrogeological and ecosystemic conditionings that make up the essential elements of this matrix cannot be ignored. There are aspects that are difficult to modify, such as the climate, the characteristics of the substrate or, even, the main geomorphological features of the relief. But it is also true that this matrix is not immutable and can be modified by human intervention. The problem is not the modification itself, but the lack of criteria to which it can respond. When the environmental matrix is constructed randomly and without taking into account the biophysical matrix, environmental dysfunctions appear: undesired flooding of areas, loss or contamina-

tion of water resources, loss of soils and the emergence of erosive processes, difficulties for ecological connectivity, and so on. This is especially dramatic in the Mediterranean anisotropic territory.

## *Territorial de-structuring and an environmental deterioration result from spatial occupation without serious urban planning guidelines*

For centuries, the biophysical matrix, which seemed infinite and all powerful, drove humans. Today, in general terms, most matrices are subjugated, “buried” under highly transformed territories, to the point that geographical features are seen as simple constructive hindrances that must be removed or saved using bridges, tunnels or corrective ground levelling. What began as the timid transformation of a complex vast matrix has become a routine and apparently autonomous activity. Moreover, the economic conceptions of the 19th and 20th centuries considered that the biophysical matrix was outside the economic processes, so that some of its productively essential components (water, soil, climate, etc.) were considered irrelevant free goods. Nevertheless, and today more than ever, these supposedly secondary factors have an enormous value (climate change, diminishing resources, forest fires, floods, and so on).

The fact is that the result of interrelations between the biophysical matrix and the transformations of human activity make up the environmental matrix, which is expressed in the form of a landscape. The correct sequence would be: original biophysical matrix (pre-anthropogenic landscape), discreet transformation of the biophysical matrix into the environmental matrix or territorial space (anthropised landscape), profound and even deleterious transformation of the matrix into unstable territory (degraded landscape), prudent commitment

to transformation and management (wisely humanised landscape). We should achieve the penultimate phase to enter decisively in the final phase.

The constant dialogue between the biophysical conditionings and the strategies of transformation of the territory mean that the environmental matrix is neither permanent nor immutable. The changes in the dominant uses of the territory, the juxtaposition of networks or the profound environmental implications (from a diversion to the forced regeneration of an aquifer) generate a new environmental matrix that interacts differently with the new planning proposals. The environmental matrix, therefore, features variable pre-existences with different levels of consolidation, generating a complex, non-immutable, system with different degrees of freedom, which must be understood and integrated into the origin of spatial decisions. Until now, however, and with few exceptions, the environmental matrix has been a mere consequence. The transformation is planned but the environmental results of the transformation are not. The environmental matrix was – and still is – the result of transforming the preceding matrix, but not towards a deliberate objective. Having a determined environmental matrix, configured one way or another, is not yet a planning objective. Some schools of thought propose this and are advancing in this direction, but they are still the exception.

The Mediterranean territory, complex, fragile and strongly anthropised, is greatly in need of this projective attitude. We must be able to plan the environment in the Mediter-

anean basin more than in other places. We must plan the environmental matrix; in other words, the transforming process of the biophysical pre-existences. The environmental matrix cannot be a mere consequence, often undesired because it is so negative. The environmental matrix must be a planned and executed objective, in the same way that we plan and execute the infrastructural or urban artefacts we build on top of it.

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The environmental matrix is not a question of ecologists but of territorial designers and must be analysed from an ecological point of view. Ecology has taught us to understand the Mediterranean world better, but has not built it. It has expressed indignation at those now destroying it, but does not have its own tools to redirect the process. Redirecting the Mediterranean environmental matrix is a sustainable objective that can only be achieved through the implementation of adequate projects. Mediterranean territorial sustainability has to be more than just a naturalist desire: it has to be a techno-scientific project that overcomes the dysfunctions caused by the externalisations of the neoliberal industrialist model. A project respectful of spatial anisotropy, historically informed, economically viable and socially sensitive.