The Saharan oasis put to the test of its Landscape: The Jerid
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Oases of the Sahara can be seen as landscapes, but can we reduce the oasian landscapes to simply what can be apprehended visually? I will introduce the notion of socioecological landscape to support the double dimension of these oasian landscapes as ecological and social products and constructions. Such an approach can be applied to the notion of landscape in general, not only to deserts.

For millennia, Saharan oases have been the centers of human presence in the biggest desert areas, which are a priori hostile places for people. These oases are built environments. As they have an anthropic origin, so they are living landscapes, shaped by local inhabitants, but also increasingly by tourism. The case of the Jerid region (in the southwest of Tunisia) offers a valuable example of these built environments, and that of the Siwa oasis (in the northwest of Egypt) provides an interesting counterpoint.

DEFINING OASES' ECOSYSTEMS: ARTIFICIALITY

Oasis landscapes excite the imagination and evoke multiple images as soon as we think about them: colonial-era illustrations (postcards, novel covers, colonial exhibitions' catalogs), comic strips (often featuring desert extremes), and scenes from movies (such as Lawrence of Arabia, by David Lean in 1962).

We can most simply define an "oasis" as a fertile spot in an arid environment. I suggest calling an "oasis" a combination of both settlement and cultivation, and a "palm grove" the specific cultivated zone of an oasis. This short definition, however, runs counter to the common Western sense of an oasis as a quiet, Edenic places of...
relaxation, where you can gather fruit from trees by stretching out your hand or kicking the trunk of a date palm (see the comic strip Land of Black Gold, by Hergé in 1950).

Oasian landscapes suggest an easy lifestyle, perhaps because the oasis itself is a kind of a miracle in opposition to desert landscapes.

**FACTORS NEEDED TO CREATE AN OASIAN LANDSCAPE**

The miracle of the oases’ ecosystem reflects their total artificiality. There is no oasis without human labor: an oasis is an exception in the desert, a kind of fragile bubble offering a specific landscape. And before everything else, it is agriculture. To exist, this agriculture requires the presence of three factors: water, plants, and labor.

It is rare that water rises by itself to the surface in the desert. For oases to bloom, it is generally necessary that people have the knowledge and means to use elaborate hydraulic equipment. Varied techniques have been implemented in the deserts of North Africa and the Middle East: wells—foggara, or qanat respectively, in North Africa and Iran—a system of kilometers of underground channels that collect drippings of water, and small dams. Sometimes water collected from distant mountains flows in rivers (wadi)—in south Morocco, for instance. The mere presence of water, however, does not guarantee the existence of oases. That is the case for the Kalahari Desert, where there is no big oasis despite the many streams from neighboring countries flowing into that vast basin.

The second factor is the presence of cultivated plants. In an oasis, plants need to be imported. The subsistence of local communities depends on cultivated cereals, vegetables, and fruit trees, all organized in mixed gardens. These plants have been domesticated from plant populations of non-desert regions that were originally adapted to different climatic and cultural situations. Even the emblematic date-palm tree, *Phoenix dactylifera*, was probably introduced in oases.

The third factor is human labor. Palm groves are a puzzle of small overlaid gardens. When oasian gardeners of the Neftzawa region (south Tunisia) prize the beauty of the neighboring Jerid oases, they refer immediately to the local agricultural skills and expertise: the oasis is understood as the outcome of know-how. Agricultural practices may vary from place to place, but permanent features remain, defining the oasis and contributing to the drawing of its landscape. For example, gardeners usually have to dig their plot of land by turning it upside-down with a hoe. In Jerid, a quarter of the garden is worked every year, which means that the entire surface of a palm grove is dug to a 50–70 centimeters' depth every four years. The essential irrigation also requires hours of labor and proficiency.

Work on the date-palm tree alone requires the careful planting of a female palm tree and its irrigation for years; the climbing of the trunk three or four times during the spring to open each inflorescence, and then pollination; the climbing of the trunk again during the summer to clean old palms, and to hang down the fragile date clusters so that they do not break; and finally the climbing of the trunk several times during fall to harvest the dates. We have to bear in mind that there are at least 200 date palms in a small half-hectare garden, in addition to other cultivation. The average garden plot is about half a hectare in the important Jerid palm groves (which total around 1000 hectares). The oases of the Jerid region host the ideal type of palm grove, in the form of thousands of overlaid gardens, structured vertically. In most cases, a three-level structure is adopted: in the shadow of the palm trees grow fruit trees, which in turn cover vegetable or cereal cultivation. This structure creates its own microclimate, and along with the major components of the oases (irrigation system, etc.), it responds to the pedoclimatic conditions. These approaches were selected and implemented by generations of gardeners. The result of centuries of daily practices can be seen and analyzed today as the oasian landscape.

So, is the palm grove still a place of relaxation and ease—a site of visual enchantment for Romantic contemplation? I find strange the idea of tourism agencies inviting tourists to spend their holidays in what is in essence a kind of “plant factory.” This mixed farming and intensive irrigated agriculture shapes the landscape, the spatial boundary of the cultivated zone is directly linked to the concern with maximizing water effectiveness and garden output.
Oasian landscapes are "built nature." But the question remains: by whom were they built? Are they only the construction of these generations of gardeners? We can reformulate the question "What is a landscape?" into "Who is talking about landscape, how, and why?"

A social anthropologist studies "local practices," but we should not limit our analysis to indigenous practices but broaden it to include all effective actors in these spaces. This means, in the Tunisian Jerid, actors of tourism and development. Those actors, with local people, converge to define what is an oasis, what "it is for," and how to read these spaces. This polyphony is not without effect on the share of resources: water, land, labor, and even ideas about the environment. Tourism affects many daily local aspects: first, use of scarce water, to be used by hotels or to embellish the scenery, then labor, diverted from agriculture, and even the definition of the oasis—a place for work or a place for a stroll?

I suggested earlier the notion of "socioecological landscape," I have elsewhere discussed "socioecological resources" that form and define landscapes as being "classical," "instrumental," and/or "relativist." The tourist modality in the Jerid dates to the Orientalist infatuation; tourism was first a luxury or adventure enterprise (at the end of the nineteenth century and beginning of the twentieth) before turning to mass tourism. In 1922, Le Grand Hôtel de l'Oasis was built in Tozeur, the biggest oasis of the Jerid; since 1980, Tozeur has had an international airport. The preoccupation and modalities shifted from the picturesque and ethnocentric to the pursuit of authenticity and cultural relativism.

Strangely, the Edenic idea of the oasian landscape that minimizes its labor component prevails among European middle-class tourists. Facing or inside the palm grove, they do not see gardens, or cultivated small plots, but a forest—a forest of palm trees. This can be partly explained by a European-centered historic mechanism: Europeans have their own history of the landscape and of "natural nature." According to Jean-Claude Chamboredon,

The genesis of the countryside as an idyllic social setting results from a long process of progressive disappearance of the rural proletariat . . . since the second part of the 19th century . . . The countryside can be perceived as a natural space after the accomplishment of the process of neutralization (depoliticization and homogenization) that erases the social oppositions and historic contradictions that are embodied in its spatial organization and practices. Then, the "de-socialized nature" can seem the place of a life subjected to natural rhythms, the haven of a traditional civilization, the decor of a direct contact with a transcendence (aesthetic or religious).3

Because European tourists of the oases do not see the obvious (to local eyes) social inequity in the resource division (land, water, workforce) embodied in the palm groves, these agricultural lands can turn into nature and "naturalized landscape."

We left the idea of defining the landscape to focus on the identity of the actors invoking the landscape. In doing so, we noticed that "landscape" is a congruent notion with the tourist practices of the oasian spaces:

Landscapes are the product of the view of someone who is foreigner to it. Man doesn't think of elaborating a landscaped representation of the place to which he is attached and where he works or lives. He maintains that space, preserves it and submits it to an order already registered in his mind. He decorates that space and embellishes it. But the conceptual schemes that guide his view . . . and that insert a value judgment in his visual analysis do not produce a mental click that instantly transforms a place into a landscape.4

Does this mean that the concept of landscape does not exist in cultures other than Western ones? We should once more reframe the question, indeed, it is less important to know if a space is perceived as a landscape or not than to understand what is regarded as valuable in these spaces.

Gardens in the Jerid are tidied-up places, carefully designed. In one place we find beds of cultivation, irrigation networks, sometimes a sheep barn, and often the hut of the gardener. The garden is often small and is private property. It is enclosed by a fence of palms, to prevent people outside from seeing the intimacy of this "domestic nature." Tourists retain the idea that they are in a "forest" when strolling along the main paths of the palm grove (always the same paths, as they aren't comfortable on smaller ones because they feel that they are violating the locals' privacy).

Tourists often agree with national (and sometimes international) agricultural service officials. For example, both would call the agricultural landscape of the oases
OASIAN LANDSCAPES: FOR WHICH INDIGENOUS PURPOSES?

I used the phrase "domestic nature" to designate gardens. It is not only to underline the anthropic quality of the garden but also to emphasize the living, inhabited quality of these spaces. More than a workplace, these are an inherited patrimony for many generations, a place where gardeners spend the day even if there is no necessity of working. It is the place where gardeners express their aesthetic, their idea of beauty.

These gardens are invested of an almost Epicurean aesthetics, wholly in keeping with the Arab traditional garden. The five senses are engaged: watermelons in summer or broad beans in winter, the perfume of roses and jasmine, color touches amid the profusion of green elements, birdsongs, songs of the gardeners climbing the palm trees during pollination or in the evening, drinking palm wine. Ambiance is one essential component of aesthetics. An aesthetics that included any more than the visual appreciation of an environment always prompted incomprehension in agronomist engineers, both Tunisian and European, who, facing these gardens, saw only a vegetal confusion that was necessary to reform. The aesthetic quality of the oasian gardens, however, partakes of more than what is seen. This is the limitation of the use of the notion of "landscape"—a concept that usually rests on a visual definition ("all the visible features of an area of countryside or land," according to the New Oxford American Dictionary, 2d edition).

For the local gardeners, living off their plots in the old palm groves, to appreciate the garden is to share it. The garden is a center where constructions of space surround the gardener. The garden is an intimate center and nevertheless a communal space. This conception is not exclusive to the jerid; one finds it, for example, in the Japanese culture, where the appreciation of the beautiful sites is inseparable from human commerce (exchange of poems, banquets, tea ceremonies).⁴⁹ Perhaps between the Jeridi gardener and the tourist, one identifies the opposition that Augustin Berque made between "the sociable landscape" and the "solitary contemporary landscape" inspired by Romantic literature and painting.

The oasian garden is private property, but also a place for collective presence working together in long and difficult labor, and in idle moments, sipping tea during the day or drinking alcoholic beverages from the palm sap at night—talking, sharing experiences, stories, songs, news. In the oases of Jerid, one can always find men gathered in "halga" or "ga' ada." The halga term means "circle" in the local dialect and comes from halqa in literary Arabic (when a sheikh teaches his disciples), and ga' ada refers to the seated position (dialect verb ga' ad, "to sit down"). During these moments, men tell the stories of 'Antara (the tale of 'Antara—"Anter" locally, pre-Islamic poet and warrior), but it is especially a time when things can be said about politics, the police, and women. These masculine meetings are certainly occasion of verbal transgression, but also of exchanges of knowledge. The aesthetic standards are communicated, the collective sanctions the individual, knowledge is transmitted; texts and comments are exchanged in the common agricultural context; one listens, one remembers accounts and local stories. A part of collective existence takes place there, in the garden.

According to Jeridi tradition, gardens of palm groves are thus not only productive areas but recreational ones as well. The palm-grove gardens produce more than a biomass: they produce social fabric. In contrast, the modern technicist paradigm—represented, for instance, by agricultural engineers—views the oasian nature as an object of technical exploitation. The "salvation" of the agricultural future of the region, from this perspective, will be indebted to the importation of modern technical support: drills, tractors, and other technologies. This movement brings among other ways of thinking and practicing in the environment. If the oasian nature is an object of technical exploitation, building this object is possible insofar as the oasis is seen as a resource to be appropriated, Nature is to be colonized, desert to be fertilized. This constant "exteriority" toward the object legitimizes the scientific study, presumed to be the only means of rational exploitation.

"traditional." That understanding has a positive value for tourists; they travel less to see exotic places than to experience authentic "exotic cultures." For the Tunisian agriculture engineer, this traditional quality has a more negative value, and he's paid to change it; Jerid oases should take part in the modern agriculture project and provide cures by exporting to Europe the most prized dates, the deglet en-nör variety.

The agricultural services did not succeed in reforming old palm groves despite extended efforts. But, using the colonial pattern, they succeeded in creating ex nihilo palm groves of deglet en-nör date palms. Why did they fail with the old palm groves? I think it is first because of misunderstanding of the function of gardens, the practices in the spaces of the palm groves, and the nature of this landscape.

An oasis garden
What is true with the obvious intrusion of modern agriculture is true with tourism as well: the oasis represents scenery, an exotic landscape. The practices of modern agricultural and tourist actors make them keep their distance from the oasian space, which is a lived space for its inhabitants. This constant distance or exteriority toward the desired object legitimizes neither their colonization nor the scientific study, but a Romantic posture with respect to nature and a relativist reading with respect to local communities. For tourists, the exploitation of nature is less technical than ideological, but the effects are nevertheless considerable.

With a posture of distance, oases are islands in a mineral ocean. Maritime imagery is frequently used in dealing with the desert. The oases would be islands or ports, the desert a sea of sand, and camels the desert vessels. This is a particularly dominant metaphor in the Western imagination; many tourists are disappointed not to find oases always immersed in the sands, although sandy zones represent only one seventh of the Sahara.

Displaying the outward dimensions of oases is no longer sufficient; tourists demand at least functionalist explanations of "how it works," of the natural and social machinery that operates behind the décor. However, the landscape remains two-dimensional, guarding its third dimension—local daily life and its details. In the Jerid, a popular tourist attraction is a ride in a hot-air balloon, offering the possibility of a comprehensive view that remains exotic. In Siwa (Egypt), where a similar bird's-eye view is achieved by climbing a mountain that overlooks the oasis, I asked a local if he enjoyed such a viewpoint; he replied, "Why should I go to see from above things I already know from below?" This is enough to shake the universality of the concept of landscape. Nevertheless, this contrast between local peoples' and tourists' ways of perceiving the oasian environment and qualifying spaces does not ensure that the local environment or local interactions with nature will not change.

Tourist actors do not come to intentionally transform the oasian landscape in its material dimension—on the contrary, their first concern is to engage with an idealized past in the desert, a remote harmony with nature. Nonetheless, they transform oasian landscape in two ways: directly by spreading new ways to think about the relation to nature, and indirectly through the services and infrastructures organized to welcome them. All facets of the local economy are intimately interlinked with the environment. Let us approach this issue by dealing with water, a key factor of life in the oasis. The competition for water is obvious: water is needed for agriculture, but is also needed for the tourism sector. Tourism service officers and hotel architects align their view with international standards and maintain that a swimming pool is required to satisfy European tourist expectations. In the Jerid, the mayor of Tozeur (the capital of the region) and owner of Dar Chralet hotel (bearing his name) went even further: he offered a 30-hectare golf course in the desert. Along with thalassotherapy and cultural tourism, golf is part of the new measures adopted by the Tunisian government to diversify the tourist product.

According to the Tozeur golf website, the course "overlooks Tozeur's palm grove which is one of the most beautiful in Tunisia. And its 35 hectares of greens are irrigated with recycled waters to preserve the water table" (emphasis mine). In two sentences, you have two major imperatives toward local nature: a posture of domination (overlook it), and, for the sake of tourists' consciences, a response to ecological concern (recycle water). We can easily imagine that this recycled water could have been used for agriculture, which is suffering from lack of water.

Even if tourist guidebooks still mention, "over 200 springs" (as in the last edition of Lonely Planet Guide), no springs naturally irrigate the oasian gardens in the Jerid. Instead, deep drillings in the ground are used. They were dug first by French colonial farmers and administrators to free themselves of the complex indigenous negotiations for this resource, and then by the Tunisian Ministry of Agriculture. It was a progressive evolution over the last fifty years from "natural" springs, maintained by the local workforce, to water drilling maintained by the administration.

To say that the exploitation of water is a "mining" operation is not inaccurate, as the exploited resources are nonrenewable. Tube wells draw from the deep water table, which is insufficiently renewed; nobody knows if the water reserve will last ten or fifty years. The dried-up springs were compensated for by more drilling in the deep water table. Because of continuous depletion, those artisanal drillings became increasingly less effective, and more energy (for motor pumps) is needed to draw the same quantity of water. Deep drilling has removed the capacity for the old oases to live on natural springs. Thus there was no true profit: the drilling provided a temporary increase of surface area for agriculture, but now the upkeep of these new plots, and even the maintenance of the old ones, is increasingly difficult.

How can an economy of tourism be inserted in such a difficult context? Ironically, by building a golf course and encouraging the development of more hotels with swimming pools. In Tozeur, eighteen hotels and five residences offer 3,500 beds. The government aimed to ease congestion of the littoral sea-and-sun tourism with the construction of Tozeur's international airport.

**NEW IDEAS FOR LOCAL RELATIONS TO THE ENVIRONMENT**

Tourism shapes oasian lands indirectly through services and infrastructure, but also through the concept of landscape. Tourism offers new ways to "read" nature. We saw that "the landscape" is the product of the view of someone who is foreign to it. Similarly, the local importance of ideas brought in the tourists' baggage cannot be gauged by the...
amount of time spent in the region (in Tozeur, tourist hub of the jerid, it is only one-and-a-half days per person on average—partially because of the difficult weather). Nor can it be gauged by the mere presence of tourists, this mobile mass of foreigners. The gap between visitors and the local population is designed by the local society to preserve itself from uncontrolled contacts. Some informal interactions are tolerated, often represented by the class of young candidates to emigration called 'beznesa.' The government also reinforces the gap, to maintain both strong political control over the Tunisian population and the benefits of a tourist open-door policy (but it drives out the beznesa, to privilege more official interactions). The result of these two confluent strategies is a strange kind of tourist apartheid, where contacts are motivated mainly by business, sex, and emigration.

However, borders separate as much as they bring together, according to one of the famous paradoxes of Edgar Morin,\textsuperscript{10} and interactions of the local and the global are always more complex than simple "culture shock": local communities haltingly give evidence of their desire to partake of the contemporary world, of the "global circulation of material and cultural flows." There is a perceptible "development of aesthetics of the 'fursa,' of the panorama and the beautiful sight,"\textsuperscript{11} This aesthetic feeling that the space confers is only visual. It comes with neither a physical relation to the place nor with sociability. This local variant of aesthetics is implemented mainly for remote landscapes, especially displayed via television. The media is one way to hold the object at bay. This abstraction of the environment can be called "tabya" (nature), a concept apart from the daily experiences of oasian people of the jerid. Today, the young beznes vigorously refuse to set foot in the pepper beds of their fathers, but they will defend the oasis and argue for the safeguarding of its aesthetics.

Here is an example: to address farmers' complaints about the lack of water for irrigation, in 1996 the agricultural administration undertook a project to pave the beds of the main wadi of the Tozeur palm grove to reduce losses due to infiltration. Young people experienced this event very negatively. "The scenery is spoiled," they said. "The Government should have done it only in the hidden places of the oasis"—meaning the places where tourists do not go. This criticism relates to the loss of its "authentic quality" (which usually merges "traditional" and "old"). These beznes stand up for the "landscape" object, as it brings the tourists, of course—in which they have a vested interest. However, they also develop a real feeling for the need to safeguard an inheritance. This preoccupation with the environment or the landscape does not arise from the local categories of environment perceptions or practices. This operation was made possible only by the exteriorization of the oasian object for local actors supposed to be from the "inside." First, they have had to imagine which representation of "nature" the foreigners have. Palm dates are no longer, for them, just the most common and obvious cultivated plant (in local interiors, a contrasting representation is often displayed: big pictures of snowy Swiss mountain forests): no, they learned to behold date palms as exotic features. And substantial consequences emerge: some gardens undergo renovation. Where agriculture services failed to reform them, tourism succeeds, and some gardens are transformed into a camping site or a cafeteria.

In the same way, young people learned to not consider their local customs archaic (although many still want to emigrate to Europe, in part to escape from them), but as valuable components of the local cultural package—not to live it, but to display it. The tradition is a point of convergence between tourism and the local society: the 'alād wa taqāldi ("local customs") are in both cases perceived as a heritage—fixed, timeless, and vouching for the true local oasian identity. In this respect, the local interface with tourism goes further in forestalling touristic desires: they even claim in the jerid a local Berber heritage (a very recent claim) when such connection is unthinkable by the local community as a whole; to the contrary, local identity is built on Arab (and Muslim) affiliations. Tourists' demands (especially French and German tourists) to see Berbers is strong enough to be relayed and reified locally (French colonial discourse highlighted the Berber component of North Africa to legitimize its annexation to Europe, given the presumed Latinity of Berber culture). Concerning the palm-grove spaces, young people operate a "purification" by excluding the compromising practices—living the oasis from the inside, like their forefathers—and by bringing out only its aesthetics.

The Jerid municipalities (Tozeur, Nefta, El-Hamma, etc.) will probably accentuate this patrimonialization of the agricultural land in support of tourism. Despite the water deficiency for agriculture, drilling was undertaken in the palm grove of Nefta to put water in the dry beds of the main wadi. In view of the expected rate of flow, water will have infiltrated and evaporated before reaching the gardens. The goal, however, was rather a "visual and sound reenchantment" of the oasis—to restore its picturesque attributes according to presumed tourist expectations. The municipality has the same schizophrenic duties as the state: to take care of two poles of activity—agriculture and tourism—even if the most effort goes clearly toward tourism.
This concern is also clear in the new strategy given to the agriculture administration: preserve the "oasian aspect." A recent official tendency is interest in conservation of biodiversity, after having long encouraged the monoculture of the deglet en-Nôr. Plantations organized by the state have been directed to have no more than 50 percent of groves in deglet en-Nôr. The objective is to try to preserve the diversity of the Tunisian cultivars, in case the catastrophe scenario comes true: the Bayoud (a cryptogamic disease that ravaged Moroccan and Algerian palm groves) comes across the Algerian border and devastates the Tunisian oases. Therefore one can preserve at least the dominant visual aspect of oases even without an (exportable) date production.

Beyond the natural landscape, tourism has an efficient role in the arrangement of settlements. In Tozeur, the municipality decided that the local mud brick is the "authentic" feature of the traditional settlement, al-Hadawi, the most remarkable area in the old town, is actually made of local yellow mud bricks, but other parts of the old town, even older, are made using a different technique. But the best way to promote tourism is to define the simplest visual identity, as in marketing; the mud brick has been widely spread everywhere in the tourist town circuit, to the extent that even some mud-brick walls were built to hide nonconforming architectures along main pathways. An architect, as early as 1993, was able to talk about a "folklorization of the space" and emphasized later the refusal of the inhabitants to get involved in such an "expression type" of their local identity.

In Egypt, nearly the same process occurs in the Siwa oasis. In two decades, Siwa witnessed significant changes to the organization of its habitat. While a radical change of space distribution of domestic units took place, the materials changed from a salty mud-clay mortar to the squared calcareous gypsum, inducing a fast evolution in techniques of construction. Although these two materials are both of local origin and production, the shift from one to the other is not without impact on the design of the habitat and the social uses of the dwellings. The argillaceous material seems to have regained favor by (political and commercial) promoters of the "traditional." The salty mud has been chosen to give a visual identity to Siwa, as a marker of the "traditional" for tourism purposes.

Reversing the usual process—by accommodating the reality to the copy—is not a new idea. Philippe Descola noticed that two tales of Edgar Allan Poe present this same reversal: The Domain of Arnhem and Landon's Cottage. In these two stories, protagonists discover a piece of nature (a large domain in the first, a secret valley in the state of New York in the second) and dedicate themselves to landscaping their environment, to smoothing and transforming it until it becomes a "real landscape"—a succession of scenes, bearing the illusion of a Romantic painting.

Oases are artificial landscapes shaped by local people and environment conditions, but they are also shaped by external ideas, values, and expectations, and in this respect tourism has had a major impact, especially in recent years. The landscapes desired by tourism, compatible with the icon of the timeless "oasis," become increasingly a marketing feature; thus tourism is shaping the oasis landscape in its image.