



# NOT ONLY DESERTS AND OASES, BUT TERRITORIAL IDENTITIES

BAJA CALIFORNIA (MEXICO) AND XINJIANG  
(CHINA) IN THE CONTEMPORARY AGE

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## **1. SOCIO-ENVIRONMENTAL OUTLOOK TO DESERT-OASIS STORIES. CULTURES AND HISTORY<sup>1</sup>**

Deserts and oases are agroecosystems that have housed cultures and human groups throughout history, with an adaptive strategy to integrally take advantage of the resources. Societies in arid areas that have developed landscape management practices and exchange networks in isolated areas with isolated or scarce availability of resources. Their isolation has also been very positive in order to enjoy freedom (social and political) in many parts of the world, from practices of austerity and food self-sufficiency.

Within the arid-desert zones, oases emerge as places for life, for production, for shelter, for agrobiodiversity, reservoirs for genetic wealth. But above all they are places that, beyond the eden looks, can be considered places to study a cultural universality and an environmental wisdom that allow to learn answers vis-a-vis the vicissitudes of the present civilization crisis.

Deserts are historical, cultural and, therefore, polysemic constructions. Being associated with the idea of absence of water in our current imaginary, when throughout history have been placed in relation to concepts such as civilization, borders, wild and distant places. They were places that the West considered

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<sup>1</sup> This text is part of the results of the Research Group STAND (South Training Action Network of Decoloniality; Reference: HUM-952; principal Researcher: Antonio Ortega Santos. [www.standugr.com](http://www.standugr.com)).

empty spaces and, therefore, conducive to processes of expansion of control by empires, places for a formation of new national identities. But they were also places for the territorial conflict between indigenous and conquerors, inhabitants and invaders disputing the scarcity of resources and the appropriation of the territory (Trejo Barjas 2011: 22). The case of Baja California Sur shows that until the arrival of the European settlers, the indigenous groups carried out harvesting, hunting and fishing practices that facilitated an austere life but still adapted to the desert space (example of which is the harvesting of the *pitahaya*). With the arrival of the Jesuits, they appropriated the knowledge of the desert to adapt them to new agroecosystems, oases, created from the symbiosis between agricultural knowledge of European origin and the “appropriate” knowledge of the indigenous groups. This entailed adaptation to austerity but also to the ability to produce more, to generate agri-food surpluses, resulting from the creation of the Oasis as enclaves of life in the desert context (Trejo Barjas 2011: 33). From the wealth and symbolic-socioproductive complexity of the hunter-gatherers who inhabited the deserts, they moved towards the “supposed wealth” of European agriculture, inserted in the oases.

Life in deserts has also been the struggle for the domestication of space and its components (Battesti 2005: 34; Grenade and Nabhan 2013: 27) at the hands of a stereotypical look of the West on these places and territories.

Deserts and Oasis are the cradle of humanity, as the places where humans settled permanent or semi-permanent forms of life (Stevens and Meretsky 2008: 22). They were places in which from ancient times settled forms of extensive cattle ranching in pastures of arid zones next to agriculture of wheat and rice, that gave rise to great empires and states. Sociopolitical systems that sponsored the development of potent trade routes (gold, salt, species and slaves, etc.) in sub-Saharan areas and the Maghreb along with subsist-

ence agriculture (Toutain Dollé and Ferry 1990: 8). But their residence depends on the ability of these ecosystems to sustain their cultural and material heritage. This capacity is threatened by the advance of neoliberal globalization and the impacts of the global socio-environmental crisis. Deserts and Oasis are undergoing an intense process of pressure for activities related to tourism, urbanization, etc. — global processes that devalue the cultures and knowledge of the desert, modifying patterns of life and forcing the adaptation of human groups to the new reality. Oman’s farmers continue their traditional practices in mountain areas (Luedeling et al., 2008: 14), in the arid areas of Pakistan (Mitral) they suffer from strong urban pressure (Nüsser, 2001: 244), or the survival of traditional forms of life In Uzbekistan, on the Tarim River in Western China as indicated by Ezcurra (2006: 55).

Facing global threats to desert ecosystems, global conservation strategies are needed, affecting both social, environmental and cultural variables. The strategies of revaluation and conservation of the biocultural heritage of these spaces involve the creation of corridors that merge refuge links to maintain energy transfers and materials that support the resistance of these ecosystems (Jiao et al. 2003: 454) or practices of environmental education and inference In sustainable tourism public policies (Liu 2003: 465; Castrorena and Breceda 2008: 158).

Any project for the restructuring of desert ecosystems must be guided by a design of the future jointly led with communities through processes of social participation. Community assessment of local and global threats, diagnosis from social participation as a key tool for the future conservation of these landscapes.

## **2. ENVIRONMENTAL GEOGRAPHICAL CHARACTERIZATION: BAJA CALIFORNIA SUR**

Baja California Sur is situated between latitudes 23°N and 32°N, where the great desert regions of the northern hemisphere are located. It has an area of 73,677 km<sup>2</sup> representing 3.7% of the to-

tal area of Mexico. It is the state with the longest coastline, measuring 2,230km (22% of the national total) including three islands in the Pacific Ocean and more than 100 islands and islets in the Gulf of California. This territory occupies the southern part of a little over half of the second largest peninsula in the world, measuring 690km in length, 43km at its narrowest part and 227km at its widest. It is defined by being a region of climatic transition between tropical and subtropical, determined by the cold waters of the Californian oceanic current which bathes the coasts of the Pacific. It has a dry and hot climate, with summer temperatures rising to 50 degrees centigrade in its desert areas. Average annual rainfall ranges between 32 and 650mm, although 80% of the territory does not even reach 150mm/year and only 5% has an average rainfall of over 350mm/year. Torrential rains (*equipatas*) have a cycle of less than three days, causing subterranean flows, though with a high level of evapotranspiration, which filter down into the recharge aquifers, of which there are only 16 in the whole peninsula, with an area of exploitation of 3,666km<sup>2</sup> (Wurl et al. 2013, p. 85). This regime gives life to the deserts and the 187 oases of the State, islets of water and vitality in a sea of aridity (Arriaga 1997: 25).

Even with this determinant of environmental constriction, due to aridity, a group of scientists from the “Centro de Investigaciones Biológicas del Noroeste” (CIBNOR) [Center for Biological Research of the Northwest] (Maya et al. 1997: 18) located 187 oases in the peninsula of which 93% (171) are in Baja California Sur, 48% are typical oases, as they have visible surface water, and 52% are atypical, with seasonal streams (Arriaga 1997: 33). In these arid and desert areas, phreatic water can reach the surface, allowing the existence of this network of oases. These wetlands are also places of refuge attracting a large variety of species (endemic or not) and are refueling points for migrating species (Lluch Belda 1997: xi).

Another geographical characteristic of the Baja California peninsula is its rugged relief. A mountain chain of volcanic origin formed by massifs known as “*sierras*” [saws] runs along its longitude, with peaks fluctuating between 1,000 and 2,000 meters above sea level. Most of the peninsular territory is covered by the Sonora desert, one of the four large deserts of North America, with a great diversity of vegetation and with high temperatures (Hernández 2000: 24). More than 2,895 species and subspecies of plants have been reported (Wiggins 1980: 46-58), providing a desert physiognomy of very varied Cactaceae coexisting with small trees and bushes. Between 300 and 800 meters above sea level, it is common to find reminiscences of what were deciduous tropical woods, and at over 1,400m above sea level, a pine-oak wood can be found. The riparian vegetation prospering in the more humid ravines is characterized by the presence of palm groves, mainly blue hesper palm (*Erytheaarmata*), San Jose hesper palm (*Erytheabrandegeei*) endemic to Baja California Sur and Washington palm (*Washingtoniarobusta*); it is also common to find date palms, introduced in the 18<sup>th</sup> century by the Jesuit missionaries to the Baja California oases (Aschmann 1957: 174). Accompanying the palm groves, there are poplars (*Populus spp.*) and willows (*Salix spp.*). In the higher ravines, there are a variety of small environmental relicts (including arborescent ferns and orchids, Wehncke et al. 2010).

In spite of the rigors that the south Californian natural environment has imposed on human settlements, the region has been inhabited uninterruptedly for more than ten thousand years, providing a Biocultural Heritage (Toledo et al. 2008: 26) of the nature of societies who managed to resist the combination of isolation and aridity throughout the ages. It was in these wetlands that the indigenous people, missionaries, ranchers, and the first towns thrived. Until the end of the 19<sup>th</sup> century, when the first wells were drilled, human life was completely de-

pendent on the water sourced from these wetlands-oases and the relationship of their ecosystem with the arid regions, giving them a central role in the environmental history of Baja California.

### 3. ENVIRONMENTAL AND GEOGRAPHICAL CHARACTERIZATION: XINJIANG

It would seem appropriate to situate the region of Xinjiang both geographically and historically. Located in the far north-west of China, the Autonomous Region of Xinjiang represents a vast area (1.66 million km<sup>2</sup>, equivalent to around 1/6 of the total area of the country), which is sparsely populated (around 17 million inhabitants (Bellér-Hann 1997: 88), and is essentially made up of arid depressions and very high mountains. In Chinese, its name means “New Frontier,” and this description reflects the distance of this region from the East of China, which historically has been the seat of power of the successive dynasties and, since 1949, of the government of the Chinese Communist Party (hereafter referred to as CCP). Indeed, it has a border of about 5,600 km shared with Mongolia, Russia, Kazakhstan, Kyrgyzstan, Tajikistan, Afghanistan, Pakistan and India. The *Uyghur* population, a Muslim ethnic minority mainly established in this area, calls the region *Sharqi Turkistan* (East Turkistan), whilst the name Xinjiang “only came into use among educated Chinese early in the eighteenth century, and ... Xinjiang was not made a province of the empire until 1884” (Clarke 2007: 261). This distinction is an indication of the tensions existing in the communist development program for the Xinjiang region; this operation forms part of a wider state program for integration and border control. For decades, the CCP has made significant investments in the region’s infrastructures, expanding and potentiating industry and large-scale agricultural commerce. In addition to this process, massive immigration into the territory of Xinjiang by *Han* Chinese has been promoted (this being the majority ethnic group in China, representing around 91-92% of the total population). It can

therefore be affirmed that the considerable economic expansion and rise in the standard of living in the region is principally a direct consequence of the development strategy of the CCP. Leaving aside more profound considerations on this aspect for later paragraphs, it is however worth pointing out that in spite of these improvements, the *Uyghur* population has remained in a state of more accentuated poverty than their *Han* co-nationals, the latter having obtained much greater benefits due to the economic opportunities provided by state policies. As a result, and also due to governmental measures that could no doubt be classified as repressive towards the traditional *Uyghur* culture, protests and acts of rebellion have been numerous, and in many cases, violent in recent decades. In addition to the interethnic tensions just mentioned, Xinjiang has traditionally been used by the central government as a destination of exile; since the imperial era, and increasingly so in the communist period, numerous labor camps have been built in the area (re-education camps for political opponents). Additionally, due to its desert geography, the government has used it to carry out nuclear tests (Bellér-Hann 1997: 88).

Geographically, three zones can be distinguished in the region of Xinjiang; each one has a series of different ecological characteristics which undoubtedly reflect its influence in the management of the metabolic relationships between population and territory: the presence or absence of wet or desert zones affects not only agriculture but also the implantation of industry and, consequently, urban settlements.

The north of the region, due to its geographic configuration (the Zungharia Basin, the valley of the River Ili, the Altay Mountains and the Gurbantangut Desert), has traditionally been a place of nomadic shepherding. The valley of the river Ili is an economically more choice area, due to the presence of hillside aquifers, which permit limited agricultural and livestock farming. Following the im-

plementation of economic development plans promoted in particular by central government, the area has become an urban center of some relevance, specialized in oil refining.

The central part of Xinjiang is located in the fork of the Tian Mountains, forming the Turpan depression, with a considerable number of oases, among which is Turpan, with a population of 242,000 people, who are mainly *Uyghurs*. In ancient times, it was an important enclave on the Silk Road; nowadays, it has been replaced in significance by Urumqi, the capital of the region. Just to the south of the Tian Mountains is Altishahr (Six Cities), which is a series of oasis settlements that although they are not really a confederation of cities, do share many common characteristics (Béller-Hann 2008: 39).

The south of the region has developed around the Basin of Tarim, being the largest fluvial endorheic basin in the world, extending over more than 900,000 km<sup>2</sup> and containing two basins, one being of the river Tarim itself and the other of the Taklamakan Desert, and the Pamir and Kunlun mountain ranges. A considerable number of oases can be found here too, namely Kashghar, Kargalik, Yarkant and Hotan. The latter, an oasis-city situated in the south-east of the county of Yarkant, has a population of around 150,000, of which the vast majority (85%) are *Uyghurs*. This is one of the most important human settlements in the south of Xinjiang, thanks to the significant presence of water coming from the rivers Karakash and Yurungkash, which have made it possible to develop the regional agricultural sector (particularly fruits, vegetables, and cotton), on the south-western frontier of the Taklamakan Desert. However, the most valuable resources of the area are undoubtedly, as in the central region, its gas and oil fields. These are of enormous importance to the growth of the state economy, source of dispute between the autochthonous population and central government, and the real reason for the human, environmental and economic conflicts that concern us here. All in all,

the southern area of Xinjiang represents the nucleus of the *Uyghur* territory, and continues to resist, in the main part, external influences, still basing itself on a traditional oasis agriculture.

In addition, this southern region has only a small number of Han Chinese in its ethnic mix. It is in the southern Tarim Basin, however, with its potential petroleum resources, that new and dynamic activity may emerge. If so, it undoubtedly will attract more Han in-migrants, but also will accelerate the flow of the traditionally small-town oasis-dwelling Uygur peoples into the growing cities of this area of Xinjiang. As the gateway to Central Asia, Xinjiang will play a crucial role in China's strategy of serving as the great Asian power of the future. (Pannell and Lawrence 1997: 227)

The geography of the region varies considerably, ranging from the high peaks of the Kunlun Mountains (6000m) to the depressions of the Turpan Basin (-154m), and presents a huge topographic and climatic diversity: mountains, river basins, hills, deserts, oasis (Squires et al. 2009: p. 199).

#### 4. OASEAN IDENTITY: TENSION BETWEEN DESERT AND OASIS

Baja California constituted a distinct episode in the process of the New Spain colonial conquest and expansion as, given its strategic importance, it required a slow and costly process of population and economic, social and political integration. (Cariño Olvera 2007: 64). The hostility of the terrain and of its inhabitants delayed the process of definitive settlement for seventeen decades and it was this time that permitted the continued existence of cultural forms which were the object of exceptional works of ethnography carried out by the Jesuits from 1697 (Engelhardt 1908: 28). They discovered how the Pericues and the Guaycuras (original peoples from the desert, and still characterized as hunter-collectors in the 18<sup>th</sup> century), implemented a nature-environment symbiosis, with enormous attention to the development of the extractive activity of pearl oysters (Cariño 1999: 120). This activity was the motivating factor behind the exploration and demarcation of the

Californian coasts and the penetration of the peninsular territory, as well as the exploitation of the autochthonous workforce. In 1535 alone, three ships set sail from the coast of Nueva Galicia, reaching the southern Californian peninsular coast on 3 May, carrying 350 people who were to form the first population nucleus. However supplies coming from the opposite coast were fraught with problems and at many times were inviable, leading to the failure of this first attempt at settlement there. Its abandonment in 1537 was followed by the expedition by Ulloa in 1539, which carried out the demarcation of the coasts and the definitive confirmation of the peninsula's size (De Mora 1774: 120; Venegas 1757: 105; Del Rio 1984: 125; Vernon 2002: 168).

After multiple attempts to explore the peninsula over many decades (Crosby 1994: 88; Mathes 1965 and 1970; Del Barco 1980: 98), the arrival and permanent establishment of the Jesuits in the peninsula of Baja California Sur in 1697 was the start of an accelerated and intense process of transformation of the Sonora Desert lands. It could be described as a process of coloniality of the territory which led to the reformulation of its lands, wisdom and peoples. They transformed the area, creating agricultural land around the places where the appearance of water from the phreatic layer was possible. These were places where the original peoples had settled – back in the age when

they were hunter-collectors – and here they initiated an agriculture based on the creation of oasis gardens with Mediterranean autochthonous species.

The result was a “Europeanization” of these ecosystems, oriented towards satisfying the food and production needs of the new settlers, Jesuits and soldiers of the Spanish crown. One of the key concepts already mentioned was the creation of agricultural lands in the desert aimed at farming activity, overcoming the arid terrain which the Jesuits described in their memoirs and travel journals (Mathes 1965 and 1970; Clavijero 1975: 88)<sup>2</sup> They introduced a whole new range of crops of Mediterranean origin (Rouston 2012: 165) such as date palms, figs, olives and other plants which created a new agrarian landscape in the south Californian desert.<sup>3</sup>

At the height of the colonial era, the transformation of the south Californian desert and oasis ecosystem was driven by a commitment to ecological imperialism, through the conquest of territories designed to be a mirror image of the irrigated arid lands of the European Mediterranean. This model, which is the central axis for our epistemological study, enables a history of the coloniality over these lands to be traced all the way to the present day, even once colonization has ended. The Garden-Missions were created as productive enclaves in the desert, to provide not only for the Jesuit community but also for the dwindling native population of these deserts.

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2 “...disagreeable and horrible, and its terrain cracked, arid, and extremely stony and sandy, lacking water and covered in prickly plants where it may be possible to grow vegetables or not, of immense piles of stone and sand... rain is so rare that if in a year there are two or three downpours, the Californians are happy... as regards rivers, there is not a single one in the whole peninsula...” Clavijero 1975: 85)

3 “It has a piece of land of three or four almuds sown with sugar cane, where they can harvest panocha for expenses, and other necessities. = A vineyard made up of one thousand eight hundred vines, distributed in six areas, four of them around the hill on land which could have no better use: the two others are on flat land but it is difficult to judge whether they occupy one or more fanegas, as they have never been planted with anything else and therefore there is no exact quantity. It has one hundred and six olive trees, distributed in two parts, and on stony soil, situated on the hillsides. Oil is collected every other year. = One hundred and forty-three pomegranate trees, both small and large, young and old; nine white sapotes; eleven lemons; eight guavas; ten oranges, both large and small; three datepalms; two limes; one avocado, one peach; three hundred and fourteen figs; eight hundred and forty banana trees; and all these fruit trees are planted along the ditches and irrigation canals. The mission currently has eight fanegas of farmland for wheat: for maize, there are five long fanegas, and these are planted this year, although usually only three are sown, according to the year and to the people able to work. For peas, garbanzos and beans, the mission has about sixteen almuds of land, according to the quantity of seeds that can be planted in these fields: and so the fields of wheat and maize have been organized to take into account when we talk of lands that do not have water (National General Archive, Mexico, DF, *Colonial Index*, Vol. 166, File 1, 64r).

CROPNAME	MISSION	SOURCE
<i>Avocado</i>	La Purísima, San Jose de Comondú	De Mora et al. 1774
<i>Sugarcane</i>	Todos Santos, San Ignacio, San Jose de Comondú	De Mora et al. 1774; Crosby 1994
<i>Custardapple</i>	San Miguel de Comondú, San Javier	De Mora et al. 1774
<i>Citron</i>	La Purísima	De Mora et al. 1774
<i>Coconut</i>	Loreto	Crosby 1994
<i>Date palm</i>	Loreto, La Purísima, San Miguel de Comondú, San Javier	De Mora et al. 1774; Aschmann 1957
<i>Peach</i>	La Purísima, Santa Gertrudis, San Jose de Comondú	De Mora et al. 1774; Del Barco 1980
<i>Chinesepomegranate</i>	Santiago?	Del Barco 1980
<i>Pomegranate</i>	Loreto, Santa Gertrudis, San Jose de Comondú, San Javier, Guadalupe, San Ignacio, Todos Santos, San Borja	De Mora et al. 1774; Crosby 1994; Del Barco 1980
<i>Guava</i>	La Purísima	De Mora et al. 1774
<i>Fig</i>	Loreto, Santa Gertrudis, Todos Santos, San Jose de Comondú, San Javier, Guadalupe, San Ignacio, San Borja, Santa Maria	De Mora et al. 1774; Crosby 1994; Del Barco 1980
<i>Lime</i>	La Purísima, San Jose de Comondú	De Mora et al. 1774
<i>Lemon</i>	La Purísima, San Jose de Comondú, San Javier, San Ignacio	De Mora 1774; Crosby 1994; Del Barco 1980
<i>Agave</i>	Santiago	Del Barco 1980
<i>Orange</i>	La Purísima, Todos Santos, San Miguel de Comondú and San Javier	De Mora et al. 1774; Crosby 1994; Del Barco 1980
<i>Pricklypear</i>	La Purísima, San Javier	Del Barco 1980
<i>Olive</i>	La Purísima, Santa Gertrudis, San Jose de Comondú, San Javier, Guadalupe, San Ignacio	De Mora et al. 1774; Crosby 1994; Del Barco 1980
<i>Banana</i>	San Jose de Comondú, San Javier	De Mora et al. 1774; Crosby 1994; Del Barco 1980
<i>Tamarind</i>	Loreto	De Mora et al. 1774
<i>Grapevine</i>	La Purísima, Santa Gertrudis, San Jose de Comondú, San Javier, Guadalupe, San Ignacio, Todos Santos, San Borja, Santa Maria, San Jose del Cabo	De Mora et al. 1774; Crosby 1994; Del Barco 1980
<i>Sapote (yellow)</i>	La Purísima, San Jose de Comondú, San Javier	De Mora et al. 1774

**TABLE 1.** CROPS INTRODUCED PRIOR TO 1774 ACCORDING TO JESUIT, FRANCISCAN AND DOMINICAN MISSION RECORDS (ROUSTON 2012: 129).

Along with the colonization of these territories, an intense genocide of the nomadic population took place, culminating around 1760. The disappearance of these people, not subjected to a forced integration but to their extinction, led to an almost total abandonment of these farmlands and their fall into oblivion after the

expulsion of the Jesuits in 1767. Their subsequent concession by the Crown to the Franciscans and Dominicans did not prevent this happening. This became a period of abandonment of the oases, disappearance of agriculture in the enclave, dereliction of the gardens and a return to an extensive livestock farming activity in

the desert. The balance in the productive relationship between desert and oases prioritized the former, given that livestock farming spread across these areas. As indicated above, the results of the colonization of these deserts and oases were many and varied.

One of the first was that the transformation of the lands with hydric availability for agriculture led to the abandonment of livestock activities (especially cattle) on the desert plains. Planting crops generated a greater and more direct return on investment than livestock, whose finality was the production of meat, hides and cheese, and had limited trade in the national and international markets. A second point to note is the anthropization of these biotopes. With colonization, the original ethnic inhabitants (Guaycura, Pericu and Cochimi) began to disappear from the deserts and to settle on the farmland as farm laborers, thus providing the workforce necessary for these new agro-ecosystems. It was not a success story. Although the farming methods were highly productive, as we have shown in previous references, the depopulation of these lands continued due to the death of their original inhabitants, as a result of violent conflicts and micro-wars, or epidemics, diseases or plagues, or famine caused by an agrarian production intended as a combination of self-sufficiency and export which was sometimes insufficient for the resident population. The third and last result of the short but intense process of colonization was the introduction of an enormous quantity of crops – of Mediterranean origin – which merged with, co-habited or superimposed the existing biotopes in these oases and deserts. (Dunmire 2004: 68; Rouston 2012: 201).

For all these reasons, after the process of Independence, the south Califor-

nian deserts and oases were the focus of a new phenomenon of internal colonization. The arrival of livestock farmers and ranchers from the Iberian Peninsula or from the Mexican continent led to the emergence of a ranching culture that managed these agro-ecosystems throughout the 19<sup>th</sup> century and continues to do so to the present day. The isolation of this 19<sup>th</sup> century society, mainly comprised of ranchers, led them to develop strategies of adaptation to a kind of life which was almost an autarchy. This isolation has limited the demographic and economic growth of modern society, but has also led it to be relatively sheltered (from agricultural plagues, organized crime and other disturbances). Ranching culture has its roots in the deserts, originally living from extensive cattle-farming, although this has been substituted during the 20<sup>th</sup> century by goat-farming for the production of cheese, meat and milk for local markets.<sup>4</sup> This desert culture remains in existence today as a result of its ability to adapt to scarcity, self-sufficiency and the symbiosis between human societies and arid terrains.

The management of aquifers and water sources in desert zones (“plains”) favored a semi-nomadic livestock farming practice until the end of the 20<sup>th</sup> century. The result was a territorial oasis identity (Cariño Olvera 2001: 62), which resisted the advances of economic development in the Peninsula of Baja California Sur. Its development was built on the industrial farming of crops intended for the market (cotton, maize, etc.) and supported by the rise of the Green Revolution, as well as mass tourism which emerged in the second half of the 20<sup>th</sup> century in the area of Los Cabos, in the south of the Peninsula. The result of this productive model was very diverse. For life in the south Californian deserts, it meant the loss of centrality as the motor of the economy of the Pa-

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4 “...ranch is any place close to a permanent water source ... at the bottom of narrow ravines where the terrain only permits small cultivated plots in danger of being washed away by floodwaters ... On hillsides so steep as to defy the imagination that cattle could survive on such unfavorable terrain ... Practically non-existent grazing and the cattle have to forage among grasses, cactus, bushes and leguminous tree branches ... forming a dispersed and freely organized society of cultivated land and livestock... in the mountains which would remain unchanged until today...” (Crosby 1992: 49).

cific Coast in the 20<sup>th</sup> century. Until the mid-20<sup>th</sup> century, livestock farming in the deserts (“plains”) and the crops from the gardens situated around the old missions were very profitable, with considerable output for export to San Francisco, Los Angeles or even the Mexican continent. With the accumulation of income from these agricultural/livestock activities, the younger generations emigrated to the cities in order to initiate or continue their education at university. They never returned. Thus, since 1960, a net population loss to the deserts and oases has increasingly occurred, the main consequence being an aging population (with the average age rising to over 65). The land became an area of productive marginality, oriented to self-sufficiency and very precarious subsistence. This historical outline enables us to consider that the south Californian territorial identity is marked by the dialogue of wisdom between the inhabitants of the deserts and the gardens whose ecosystems they managed to run in a sustainable and adaptive way. At the beginning of the 21<sup>st</sup> century, the south Californian deserts and oases, now rooted in their deterioration and abandonment, emerged as highly potential laboratories for the study of vulnerability to climate change, evaluating indicators such as the dwindling “*aguajes*” (watering holes for the livestock) and changes in the flight paths of migrating birds, that used to use this territory as a resting place, but are no longer visible.

##### **5. GENTRIFICATION OF THE TERRITORY, DESERTIFICATION OF HUMAN AND NATURAL RESOURCES**

“The Muslim Chinese,” as they are known, form part of the scenery of the Xinjiang region, with their folkloric dress, their mosques and their traditional music. It is not difficult to find their typical businesses and places of prayer within the cities and in rural areas. They are also representative of the social changes that they have had to endure in this century, as a result of economic development and particularly due to the exploitation of the

natural and human resources that China has imposed on the territory of Xinjiang, which has propitiated the change from a net rural autochthonous culture to a gentrification of the territory and an inequitable division of its natural resources. This fact in turn has given rise to the hybridization and the submission of the original regional cultures, through policies of subalternization and prohibition of the fundamental pillars of the *Uyghur* culture, as well as problems of transculturation and illegalization of their traditional customs. The aim is to find out more about a social group which in general is unknown in the Global North, and which is an “Orientalized” minority within a subject which in turn is “Orientalized” according to Euro-American thinking. To shed light on the mechanisms of assimilation into the Chinese society; to denounce in a second plane their sublime and shameless intolerance; to show the mechanisms of metabolic internal colonialism, both environmental and human, of China in the territory of Xinjiang; these are the tasks which we aim to undertake here, reviving the silenced voices, reviewing their history to include those, who participated in the past and continue to do so in the present, and whose power and presence, nevertheless, has been excluded by the dominant narratives. In China itself, the “museum” vision has prevailed with respect to these cultures, always in “far-distant” desert or mountainous lands (an example of this is the Western Development Program, which perpetuates, both inside and outside national borders, a folkloric and uniquely touristic vision of the peoples that live there).

The very question of geographical denominations represents one of the factors which is worth highlighting as mentioned above. As Béller-Hann (2008) asserts, until the mid-20<sup>th</sup> century – i.e. approximately until the founding of the People’s Republic – the denomination of the oases has conditioned not only the mechanisms of self-perception by the indigenous communities, but also the vision of outsiders, who generally identi-

fied the whole surrounding region with the name of the oasis (Béller-Hann 2008: 39). Similarly, these oases usually included both urban and rural settlements; and each name is accompanied by an epithet, normally of Arabic and/or Persian origin, which gave rise to the idea of an “essentially Islamic landscape” (Béller-Hann 2008: 40), a demonstration of the strong predominance of the religion of the prophet Mohammed in the region.

What is undeniable is the enormous geographically strategic importance of the region throughout the centuries, and the repercussions that the natural and human resources have generated in its relationship with the surrounding states.

From a strategic point of view, Xinjiang represents an immense geo-political resource, as it borders on 13 countries, many of which are the most troublesome in Asia, and is home to the main non-*Han* ethnic groups, who share many cultural and religious aspects with the inhabitants of the neighboring nations.

Xinjiang's traditional urban economy was based on oasis farming activities and trading. More recent development, particularly that associated with the immigration of Han Chinese, has been based on the development of new industries, many associated with extractive industries such as oil refining. The latter has led to a much larger share of secondary sector workers in the urban economies of the cities, especially those in the Junggar Basin north of the Tian Shan. (Pannell and Lawrence 1997: 215)

During the 1950s, 3.5 million inhabitants of Xinjiang, out of a total of 5 million, were of *Uyghur* nationality, whereas there were only around 200,000 *Han* inhabitants. Since then, it is estimated that around 6 million *Han* Chinese have settled there, taking the total population to 16 million in 1994, with a percentage of non-*Han* population of 62% (Démurger et al. 2001: 15).

From an economic point of view, the northwest of China is where the highest levels of poverty are to be found. There, the primary sector (basically monoculture) and secondary sector (heavy industry of extraction and exploitation of

raw materials) represent a much greater percentage in national GDP than in the coastal regions; however, it also represents an important natural resource for the country, particularly in the energy sector (more than 80% of new oil-wells and natural gas reserves are concentrated there, fundamental to a country which imports large quantities of oil). In 1999 the “Western Development” campaign was presented, emphasizing the future development projects for transport, infrastructure, industry and exploitation and transmission of energy resources. At the same time, a “local” and “cultural” development of the various zones was attempted, in accordance with the ethnic, social and cultural specifics of each of them. It is clear that in order to encourage a national economic development which included all regions, and create a certain homogeneity between them, the State had to have a strategy for the development of provincial culture, to legitimate the accelerated change in the economic structure of the province, and which would also require the participation of local businesses. Politics and the state, therefore, must continue to form an essential part of the process of regional development, although “highlighting the significance of culture in a regional way can, albeit in the long term, be of great use in understanding the dynamics of the state and of society” (Goodman 2007: 32). By looking at a topographical map of China, it immediately becomes apparent that the region of Xinjiang presents numerous obstacles to economic development, due to its geographic characteristics. For a start, it is extremely remote from the coast (over 1,400km away), and access to it is impeded by numerous and imposing mountain chains and tablelands, as well as deserts in the confines of the north and west. Additionally, the climate in western China, added to the lack of water in the area, makes it unsuitable for developed agricultural production, and only 8% of the land is arable. This also explains the lower population density there (in 1998: 46 inhabitants/km<sup>2</sup> as opposed to 126/

km<sup>2</sup> in the southwestern regions of the country, which had the next-lowest population density) (Démurger et al. 2002), as the northwestern region is arid and the southwestern part suffers considerable energy deficits (Sun 2013). On the other hand, 5% of the land has a gradient of over 10 degrees in comparison to 2.5% in the northeastern, coastal and central provinces. As stated by Nur Bekri<sup>5</sup>, president of the regional government during the times of implementing the development program, in the case of Xinjiang, the benefits of its industrial chain of oil, cotton and tomato were to be exploited, thus taking advantage of its considerable energy resources and its agriculture as principal strengths to drive its regional development.

There is an interesting and clear division of employment and economic structure between the urban and social systems of the Junggar and Tarim basins. The Junggar Basin is the location of cities that are largely industrial in economic structure, along with other functions, and also are largely peopled by Han Chinese. South of the Tarim Basin, the cities are smaller, and their economic structures focus more on trading and service activities. The urban populations, with the exception of Kuerle (295,500 population) consist largely of the *Uyghur* people; the structural transformation of these cities as oasis centers for the growing of food crops and traditional trading activities is proceeding at a comparatively slow rate. (Pannell and Lawrence 1997: 218)

It is fundamental to underline the relevant intentions of a geo-political nature that accompanied these measures; on the one hand, even since the times of Mao, the development of the inland regions of the country has been attempted, with the aim of impeding the existence or worsening of differences in economic and social development between regions, and promoting economic self-sufficiency in each and every one of them; on the other hand, central government had a clear

objective, dictated by the diplomatic and political circumstances of the time,<sup>6</sup> of “preparing itself for war” (Rovetta 2002: 94), and thus decided to promote certain industrial development in inland regions of the country, remote from the coast and therefore less vulnerable to foreign military attacks. It is apparent, however, that the massive transfer of military personnel to an area considered “troubled” in order to control all its economic activities, from agriculture to mineral extraction, had very clear intrinsic socio-political objectives.

The change of an eminently rural economy to an industrial one necessarily brings with it urbanization and changes in social structures. Clifton Pannell and Ma Lawrence (1997) analyze in depth not only the modalities typical of urban transition in the region of Xinjiang, but also the interstate and ethnic relationships derived from this transition. The factors which have most influenced the configuration of the “new Xinjiang” are the expansion and improvement of the transport system, with new links to the republics of Central Asia recently completed or planned; the growth of the cities and towns; the rapid expansion of industry, particularly extractive activities such as refineries of chemical products derived from oil, as well as local products (wool, cotton, etc.); significant increase in trans-border trade, particularly with Kazakhstan and Kyrgyzstan; and a higher general provincial rate of urbanization than the national average (Pannell and Lawrence 1997).

In summary therefore, the strategic worth of Xinjiang is self-evident; indeed, the central Chinese government considers that the development and “normalization” of the region should be among its priorities in its Five Year Plans.

In the light of the numerous armed incidents that *Uyghur* secessionist groups have provoked, it is evident that

<sup>5</sup> China Daily, March 22, 2010. Accessed December 12, 2016.

<http://www.casaasia.es/pdf/41910120609PM1271671569399.pdf>

<sup>6</sup> Not long after the establishment of the People's Republic of China, the country played a relevant part in the Korean War, and later was protagonist in the Cold War, the Vietnam War and the serious tension between China and Taiwan (the latter having the support of the United States) (Rovetta 2002).

the measures of economic development in the specific case of Xinjiang, in spite of having achieved important advances in recent decades, are far from resolving not only the economic situation but the extremely complicated socio-political one; due to the important ethnic and cultural differences which separate the *Uyghur* people from the *Han* majority, and as a consequence of the complicated and often tense and violent relationships between the central government and this ethnic minority, the climate of political instability and the constant vindications of the *Uyghur* people, who brand many of the government measures as restrictive and humiliating to their culture, create obstacles in the development of a region which possesses highly valuable economic, natural and cultural resources.

It seems appropriate to underline two opposed aspects in the development of the region, as proposed and implemented by the CCP: on the one hand, the economic successes are apparent and laudable; on the other, the social inequalities, policies of social fragmentation and the conflicts arising from them, mean that the development of the region is far from being real and comprehensive, and the attitude of central government to Xinjiang can be likened in many cases to that of a colonizer who exploits the natural and human resources of an area, constructing only the infrastructures strictly necessary to make industrial development possible, using specialized labor from the “metropolis” (in this case, *Han* Chinese), and crushing, or at least restricting the freedoms of the autochthonous population.

Returning to a less socio-political and more geographic approach, the Northwestern region of China is characterized by a strongly continental climate, typified by scarce rainfall, a major thermal excursion, and the presence of desert territories (22.5% of the total territory, Li 2001: 318), each year increasing by about 2,000 km<sup>2</sup>, due to causes related to human activities —especially related to the urbanization and massive industrialization of the territory— and climate change. The

forest heritage of the region (around 3.5% of the total area, Li 2001: 318), which concentrates especially around water sources, forms numerous oases, where agricultural production and the settlements of the traditional indigenous population are concentrated, despite the fact that, in recent decades, groundwater levels have fallen precipitously, causing a significant loss of vegetation (Squires et al. 2009: 36). Likewise, from the very inclusion of the Northwestern regions to the Chinese Nation-State —inconstantly during the Qing Empire and, finally, with the founding of the People’s Republic of China in 1949, “when the young People’s Republic went on a nation-building spree, razing farm and wild lands to build cities and create infrastructure to accommodate a growing population. Such human activity left much of the land unprotected against wind erosion and deposition from the surrounding deserts” (Petri 2017: 12)—, extensive forest land has been felled and reduced due to the increasing need for fuel production, wood and paper, fundamental for the production of material for the political message that the Central Government wanted to spread (Luedi 2016: 4).

Likewise, the increase in temperature has caused a considerable reduction of glaciers in the high mountains that make up the Northern part of the territory of the region. Between 1963 and 2000, the Tianshan glacier was reduced by approximately 12.5% (Squires et al. 2009: 42). Water from glaciers represents an important reservoir for arid interior areas, such as the Taklamakan desert region in the Southwestern part of Xinjiang. Due to the presence of large tracts of land and pastures, the region has traditionally lived in transhumant seasonal grazing, taking advantage of the different climatic areas and the resources of the regional topography. The watersheds accommodate the herdsmen and their herds in the winter season, while they move to the hills in the spring, to take refuge in the highest peaks in the hottest season, and return to the basins in the fall season, making routes

of up to one or two months (Squires et al. 2009: 47) to reach the pastures.

However, as noted above, anthropization of the environment, in combination with rising temperatures due to climate change, make the traditional nomadic lifestyle and grazing—that has historically been practiced in the region—become more and more non-viable. The reduction of the level of annual precipitations affects the production of hay, fundamental for the sustenance of the herds. Also, the introduction and implementation of crops at an extensive level requires that the amount of water employed deviates from its traditional use, causing other sectors to reduce availability. Cotton production, for example, accounts for 10 per cent of world production in Xinjiang: the Tarim Basin, whose precipitation level barely reaches 50mm per year, supplies almost exclusively to glaciers (Technical University of Munich 2015: 1), and is a valuable area for this crop, because the dry climate is conducive to the growth of the plant, which at the same time needs lots of water—from the glacier reserves—; However, the water reserves of the soil lose the possibility of regeneration. In the last 50 years, therefore, the inadequate exploitation of aquifers to irrigate intensive crops has led to a progressive salinization of the land, which hampers its use by traditional farmers and pastoralists. To all this, the massive logging of trees is joined to create more cultivable land, which also favors the increase of the temperatures and the advance of the deserts.

“Currently, 27.4 percent of China is desertified land, affecting about 400 million people” (Petri 2017: 6), and the numbers continue to grow year after year, despite the measures that have been implemented from Beijing since the 70s to try to reverse this phenomenon. The Great Green Wall is, as the name implies, a strategy that tries to create a natural barrier to the advance of the sand, through “planting of millions of trees along the 2,800-mile border of northern China’s encroaching desert, while increasing the world’s forest by 10 percent. Also known

as the ‘Great Green Wall,’ the project’s end date isn’t until 2050; so far, more than 66 billion trees have been planted” (Petri 2017: 14), and “The end target is the creation of 405 million hectares of new forest – covering 42% of China’s territory – and increasing global forest cover by 10%. The goal of this new tree line is to prevent erosion and desertification by creating a barrier of stable soil across the north of the country” (Luedi 2016: 6).

However, the lack of proper planning of this measure has meant that, despite their good intentions, the reforested territories have to be subjected to constant bonus and rehabilitation processes: some of the species chosen to repopulate the area, such as pines and poplars, require a large amount of water, which evidently lacks soil, causing the death of many specimens and, paradoxically, a further impoverishment of water resources. Even so, there has been a reversal of the expansion of the deserts between 1999 and 2014 (Petri 2017: 20).

Some reflections are therefore necessary on this point, and after analyzing alarming data and figures. China’s progressive desertification is a recognized fact, and it alerts the authorities not only of the country, but also environmental scholars worldwide. In addition to natural causes, it is essential to emphasize human intervention, and the impact of the expansion of urbanization and the exploitation of territorial resources, aimed to massify the economy and supplying the growing needs of an expanding population. The political reasons for the abusive use of the medium have been stressed previously; The need to seize a territory rich in natural resources useful for the growth of the national economy (coal and gas, especially), together with the will to sedate eventual independence claims by the indigenous communities have pushed a massive population movement towards the region, which has undoubtedly broken the balance between man and nature with which the territory was governed.

Measures taken from Beijing to remedy the advance of deserts—and hence

the loss of exploitable resources— have, as has been seen, failed to respect sustainable management models, and faltered to achieve the expected results in a full satisfactory way.

This opens a series of questions and interesting aspects that need to be further investigated: first, from an environmental and ecological point of view, it is essential to monitor the situation and establish plans to prevent natural catastrophes. But from a sociopolitical point of view, it becomes necessary to disclose the mechanisms of gentrification and damaging management of the natural and human environment, as a consequence of extractivist policies with a colonial matrix, which cause a desertification that is not only physical, but human and epistemological, causing knowledge and traditional practices disappear against the needs of a capitalist structure.

### CONCLUDING REFLECTIONS

Our dual view of the deserts and oases of Baja California (Mexico) and Xinjiang (China) aims to shed light on the processes of colonization of these territories in the contemporary era: processes of appropriation and transformation of desert and oasis lands which have led not only to the reconstruction of their management systems but also of their populations. From the case of Jesuit colonization in Baja California to the *Han* imposition in Xinjiang, it can be seen how in both cases colonial practices were implemented which transformed the landscape, population systems and even decision-making in the management of the land and its resources. With the passing of time, this colonization has taken on a new facet: the coloniality of its people, their land, wisdom and powers, meaning that colonial forms are continuing well beyond the end of colonization itself. Practices of cultural annihilation, the disappearance or subordination of ethnic identities to the prevailing logic of the Nation States, have given rise to places either with inter-ethnic or religious conflict in the example of Xinjiang or with the disappearance of ethnic groups in Baja California, in this

case by building a Europeanized territory with its own biological conditions and focusing on labor of European or Mexican origin that with time led to the creation of community projects to manage the territory outside the policies of government during the second half of the 20<sup>th</sup> century. Resistance, conflict and new government proposals for the region require a non-colonial consideration of this historical process, as pockets of resistance arise which symbolize how capitalist modernization can encounter obstacles in its aim to homogenize the processes of building societies and identities.

The inhabitants of these lands have historically developed the capacity to adapt to conditions of scarce water, applying their acquired wisdom to ensure their subsistence. This biocultural knowledge has made it possible to obtain the maximum output from the land, without altering its conditions, adjusting their learning both in the past and in the present without undermining the biophysical rhythms of the land, water and ecosystems. The colonial processes of identity imposition were used as an ideological tool with which to “delete” the past in order to reprogram a territory now under the control of new players from a Eurocentric modernity.

There remains one alternative: that these communities can expand their present to achieve a new future, continuing with more sustainable practices from which we can learn; a future in which the land, oases and acquired wisdom would be the central tools with which to build other possible worlds.

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