

# CONTINENTAL CULTURAL SALT MINES IN ANDALUSIA: ECO-CULTURAL RESOURCE WITH DIDACTIC AND TOURIST POTENTIALITY

*Rafael Vega-Pozuelo*  
*Martín Torres-Márquez*  
*José Naranjo-Ramírez*  
Universidad de Córdoba

a72vepor@uco.es, martin.torres@uco.es, ch1naranj@hotmail.com

## 1. PREMISE

This work is part of a larger project in which, with the doctoral purpose of one of the authors, it is sought to study and characterize the set of water sheets (natural and salt-cultural wetlands) that are frequently located in the central area of Andalusia.

It is intended to provide sufficient information to understand the most relevant scientific bases of an industrial heritage in patent process of extinction as is the case of the continental cultural salt wetlands and that could serve as an important resource in proposals for tourist, cultural and didactic resource, as well as for the economic revitalization of this area of the center of Andalusia, because it has an architectural, landscape and natural heritage of ample possibilities, although in process of abandonment and disappearance.

This purpose is not easy due to the complexity of the topic of study and the scarcity of methodological and conceptual references from the field of human and environmental geography.

## 2. TERRITORIAL FRAMEWORK

Its study and knowledge is of obvious interest, and the area between the Guadalbullón river (on the East) and the Genil river (on the West), both tributaries of the Guadalquivir, the biggest river in Andalusia, has been chosen as representative from the spot. We have been working on 89 municipalities from four different provinces: Jaen, Cordoba, Granada and Seville; so far in that space we have listed 117 cultural wetlands, with a total surface area of 18.269.469 sq m, to which other anthropogenic and eco-anthropogenic elements are added, such as ponds and other natural wetlands, from which 222 have been already inventoried and cataloged.



In the year 1631, salt was sealed, and its management was entrusted to the Salt Council, made up of eight councilors, one for each province.

The reopening of free-exploitation of salt mines also produced the construction of multitude of small salt mines in the center of Andalusia, attending to a simple subsistence economy and producing a few tons of salt per year, and even commercializing it through barter instead of through sale. These systems were maintained until the end of the 1950s, when the improvement of economic and social conditions wiped out most of the small continental salt mines (Quesada, 1996).

#### **4. SALT MINES IN THE CENTER OF ANDALUSIA**

In the artisanal salt mining of the center of Andalusia the water is first subjected to a process of concentration in rafts whose name, “calentadores” or “heaters”, is more related to the temperature than to the concentration, although it is the latter that increases. When a concentration close to the saturation point of sodium chloride has been reached (35,9 g per 100 ml of water), the brine goes to the crystallization rafts, which also receive different names: “sinks”, “crystallizers”, “pools”, etc. (Quesada, 1996). The ratio of surface area to ponds of one type or another depends on the initial concentration of salt water –in some cases we have measured concentrations of 22 degrees on the Baumé scale at the spring (for example, salt mine of Vadofresno, in Baena)–. Thus, in some springs such as the one mentioned, water is almost saturated in salt and water simply accumulates in tanks until it reaches the crystallization stage.

In our study area there is a lot of evidence of halite that, although some do not give rise to visible deposits, produce the salinization of ground or surface water in many places. At least 11 streams in our study area have the name of “Salado”, due to the presence of salt dissolved in them.

This abundance of salt water has made until recently have been exploited in this territory enough salt. At the end of the 1960s, 9 artisanal salt mining were operating in our study area (Ríos, 1963). All of them, with the exception of the Salinas de Duernas (Cordova – Spain), were very small in size, and each of them produced a few tens or, the largest ones, a few hundred tons of salt per year.

#### **5. THE CONTINENTAL SALT WETLANDS AS A PATRIMONIAL, GEONATURAL AND GEOCULTURAL RESOURCE**

Continental salt mines encompasses diverse elements that constitute patrimonial resources and, therefore, tourist and / or didactic and can act as factors of location of the action that we detail in our investigation.

One of the interests and debates that the previous awakens in today’s society does, among other things, because heritage has traditionally been a very biased concept towards values that are called historical-artistic. Actually, it covers much more than all of this and it should not be excluded from the heritage to the derivative of the industry, beyond the last two centuries (Casanelles Rahola, 1998).

In view of the above, we can conclude that the salt heritage of the center of Andalusia is implicitly included as an integration of landscapes with cultural values and concrete buildings that address the relationship of economic and social development of individuals and communities with nature and the environment.

Therefore, it should be noted that tourist and educational itineraries related to continental salt mines, in our study area can also be a product of cultural consumption that, like other goods, in principle superfluous, allow to acquire a way of knowing, to put manifest a certain taste or demonstrate the possession of a certain “cultural capital”(Urry, 1990). Hence, parallel to the production of space, we should talk about the image production associated with it (Vera, López Palomeque, Marchena, & Clavé, 2011).

Beyond a simple discussion on the implementation and distribution of uses and systems that facilitate the functional integration of a territory, it is a fundamental instrument to avoid territorial problems, achieve social and institutional support and establish principles of cooperation, cohesion and territorial balance (Antón Clavé & González Reverté, 2005).

To all the above, we must add the need to take into account a series of specific criteria, such as:

- The proximity to a main access road and possibility of offering parking to visitors;
- existence or not of development or conservation initiatives in the area and tourist or educational potential;
- type of artisanal salt mining (associated buildings, small buildings, etc.), historical value and flexibility of spaces;
- possibility or not to incorporate new buildings and enrich the image of the artisanal salt mining;
- provision of new services, evaluation of different promotion strategies and development of a conservation plan, among others (Piñera & Millán, 2016).

The partial analyzes carried out in our study, still ongoing, allow us to make a diagnosis of the weaknesses, threats, strengths and opportunities (SWOT analysis) to specify the most relevant actions for the future development of quality tourist and educational itineraries on the salt heritage in the center of Andalusia.

## 6. CONCLUSIONS

From the perspective followed in our research, we propose three keys that seem to be within the limits of what is possible, between reality and desire, in the proposal of tourist and didactic itineraries related to the salt heritage in the interior of Andalusia (Vera & Anton Clavé, 1996):

- Need to express urban relations in the study area, including tourism promotion and adequate sustainability of the salt mines, as well as the protection of these in the urban future of the respective affected municipalities.
- Landscape management and environmental qualification must be the cornerstones of all the territorial planning of this unit, with a double strategy: 1) design with

flexible, sustainable and competitive criteria the tourist networks and 2) these designs must be feasible for tourism marketing, with criteria of low impact and high territorial and social integration.

- A concerted management of the salt heritage, in its tourist and didactic aspect, where there is a double relationship between the public authorities (especially at the local, provincial and regional levels), with the host society, which should know and participate in this strategy, as well as with the economic and social agents that are involved.

