

## Editor's note

### Points of interest:

- The workshops
- The salicornia

### The ECOSAL ATLANTIS endeavour

The essentials of the ECOSAL ATLANTIS endeavour have ended. Just as with the salt works themselves, the moment has come to take stock and pack. It is time to assess production for quality and quantity. If salt needs the knowledge of salt-makers and good luck in terms of weather, projects like ECOSAL ATLANTIS require not only the knowledge of all the partners, but also their goodwill, because if the adversities of the weather do not affect the projects, adversities that arise from difficulties with communication always cause their problems.

We dealt with and conducted our business in 4 languages (ENG, SPA, FRE and POR), understanding was not always easy because the social and geographical contexts are quite different. However, encounters and exchanges of experiences helped to overcome difficulties, each site and host partner always tried to give the best care possible and show the local sites, the uses and activities related with the salt pans and with the achievements of ECOSAL ATLANTIS. Early in the project some dark clouds already hovered over the Portuguese economy, which worsened in subsequent years, spreading later to Spain and then affecting France. This atmosphere also affected the project somewhat, especially in the establishment of partnerships with public and private entities outside ECOSAL ATLANTIS.

We're still at the stage of "storing", we already know what we produced and despite the difficulties, we can be proud of some of our products because among other achievements, the inventory of sites in the UK led us to discover and document hundreds of archaeological and historical sites where the production of salt was carried out. This had never been described before nor had we ever imagined that there could be such a profusion of such sites. This opens up great perspectives for the salt route in the UK, because many of these sites are located on stretches of coastline that are covered in the category of "protected landscapes".

Moreover, during the iconographic and documentary research carried out by the project on the Atlantic's salt works, the Geolitomer (University of Nantes) team found dozens of unpublished documents (memoirs, reports, topographical plans and other drawings) on the salt works at Cadiz, in a French military archive. This opens new perspectives on knowledge of the techniques, production and development of this important salt-producing region of the Atlantic.

In the field of biodiversity the compilation of lists of bird species that appear in the various participating places served to confirm the existence of great biodiversity, indicating the importance that the

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salt pans have in conserving species listed under varying degrees of threat in the different countries. The comparison of the management experiences in biodiversity also allowed us to establish a series of recommendations that can be replicated elsewhere in places with a similar typology.

The cultural heritage inventory which was carried out will perpetuate the memory of objects, uses and techniques, where commonalities between regions abound but where there are also many startling differences.

Museums and interpretive centres on salt and the salt pans may use common interpretive means by using the pedagogical suitcase. We discussed some topics that open up or help to consolidate new avenues, such as the therapeutic and cosmetic use of salt pan clays, or how the interpretation techniques and methods used at salt pan sites can be adapted for people with special sensory or motor needs.

We worked as a network and opened up the project to the exterior. The salt route will be what our partners and their associates want it to be. The Final Conference of the ECOSAL ATLANTIS Project was in Victoria on the 21st and 22nd of November and marked the beginning of another journey. The last Newsletter reported on the results of the Conference.

The ECOSAL ATLANTIS Newsletter will appear in one more edition with a different format, a final number (May/June 2013), which will mark the official ending of the project.

As editor of all these numbers and "portrait painter" of the salt characters that have informed them, I bid you farewell with best wishes for a "good harvest" for everyone.

Renato Neves  
National coordinator of ECOSAL ATLANTIS in Portugal

## Action 5.5. The Organising of workshops

Under the ECOSAL ATLANTIS project, the University of Aveiro was responsible for the conceptualization and development of a series of workshops as part of Activity 5 - Sustainable Territorial Development. These workshops were intended to disseminate experiences and skills related to the use of salt production and the facilities that are part of these sites to specialists and the partners of the project and to create a multiplier effect of these new forms of exploring salt-related resources.

To this end we designed three different types of workshop: WS1 - Salt, an enemy to kill or a product to know? geared towards the characteristics of the product and its relationship with health and nutrition; WS2 - Promotion of accessible tourism in salt works, directed to the challenges posed by the development of tourism activities in the production area in order to create conditions for the reception of groups with special needs, WS3 - Clay, Health and Wellness, focused on the exploitation of marine clays to be used in balneotherapy, and dermo pharmaceuticals and cosmetics

The workshop "**Salt, an enemy to kill or a product to know?**" whose goal was to share knowledge and experiences about the product "Artisan Sea Salt" in the areas of Gastronomy, Nutrition, Health and Food Chemistry was organised in two occasions, on the 27th November 2010 and the 18th June 2011. The specialists we invited interacted directly with the participants through a set of activities intended to:

- Highlight the difference between Artisan Sea Salt, Fleur de Sel and Industrial Salt (sanitized or purified);
- Highlight the benefits of using artisan sea salt and fleur de sel;
- Highlight the different approaches to the product, established by the areas of Gastronomy, Health, Nutrition and Food Chemistry;
- Raise awareness among participants, by means of the necessary information, so that they can choose to use artisan sea salt and fleur de sel and defend its use, in their different domains.

With this in mind, the workshop was organized in different stages::

**Conversations around Artisanal Sea Salt - a product to rediscover** made up of the presentations of the invited specialists.

**SALT - which product (s) are we talking about?** A show of different salts from various geographical origins and with different production methods (industrial and artisan) – A CHART OF SALTS. The purpose of this activity was to enable participants to make a sensory and morphological differentiation and evaluation (aroma, colour, brightness, shape and size of the crystals) of the different salts under analysis here.

**Artisan Sea Salt - a pleasure with a "bitter" taste or the Salt of Life?** A tasting test session with a register form to evaluate three samples for each type of dish, each seasoned with the same amount of the three different types of salt – artisan sea salt, purified salt and fleur de sel. After this evaluation there was interaction between the specialists and the public to exchange comments on the samples.

At the end of the workshop (**Presentation of Final Results**) and after prior treatment of the results, these were presented to participants, which informed a final discussion session.



Image 1 - A taste test.



Image 2 - Organoleptic evaluation.

The workshop "Promoting accessible tourism in the salt pans" was premised on the increasing demand for areas with salt pans for tourism and leisure. These sites provide an environment of tranquillity that can afford moments of leisure and well-being of high quality to visitors; however they present some difficulties in terms of mobility/accessibility for people with special needs. The workshop sought to identify the needs of those with special needs when visiting natural spaces, as well as to adapt the visit formats currently in existence in the Santiago da Fonte salt pans:

The Workshop was conducted in three distinct phases:

On the 29<sup>th</sup> April 2011, during the first phase, we presented the contributions of associations and organizations that work with groups with special needs in order to improve the visiting conditions to the Santiago da Fonte salt pan.

In the second phase, held on June 1<sup>st</sup> 2011, there was a pilot visit to Santiago da Fonte salt pans with a group of people with impaired mobility and with sensory difficulties. Finally, on 17 June 2011 (Phase 3) – The Workshop on Groups with Special Needs - Promotion of Accessible Tourism in Salt pans.

We developed a workshop that integrated the specialists invited for phase 1 and people with expert technical knowhow within the area of tourism, natural spaces and mobility, as well as our project partners. The main objective of this third phase was to impart systematised information from the previous phases, receive input from the various stakeholders to improve the visit formats currently in use and produce a draft action program to implement with regard to the case study (Santiago da Fonte Salt pans).

The development of this work made it possible to:

- Transmit information about the needs of the public who have limited mobility and/or have sensory difficulties, in visiting natural spaces, including salt works;
- Receive inputs from the various participants to develop the proposed visit format;
- Develop a proposal for a model of an inclusive visit that will accommodate the specificities of people with special needs.



Image 3 - Visit to Santiago da Fonte saltpan (2<sup>nd</sup> phase).



Image 4 - Workshop group discussion (3<sup>rd</sup> phase).



Image 5 - Birdwatching access ramp (detecting problems).

The two editions of the workshop "**Clays, Health and Wellness**", held on the 7<sup>th</sup> November, 2011 (auditorium of the Educational Complex of the University of Aveiro and the thermal spa of Caldas da Saúde) and the 21<sup>st</sup> May, 2012 (Onix Hotel - Viseu and Termas de Alcafache), aimed to analyze the clays available in the salt pans (on their own or in conjunction with hypersaline water) and the possibility of exploring this resource, together with the activity of salt-extraction, as a product that can be used for medicinal purposes and well-being. This enabled us to present the latest research results on clays, namely, with regard to the physical and chemical properties of special sands and clays traditionally used as curative materials.

We wished to convey to the participants:

- information enabling the evaluation of relevant properties of clays (chemical and mineralogical composition, ionic exchange and exchangeable ions, specific heat capacity and heat diffusion) that are traditionally considered to have good curative properties for the treatment of orthopaedic, rheumatic, psychiatric and skin diseases;

Both editions of the workshop were structured with different phases:

- A presentation phase with talks from specialists from the different areas of coastal and marine geology, of mineral resources and heritage, of clay mineralogy and sedimentary geochemistry: applied geophysics and the enhancement of minerals and industrial rocks; hydrogeology and physiotherapy. A debate on the results of research (the morning) was also held;
- A technical session in a thermal spa centre was also organised, with a demonstration of balneotherapy and dermocosmetic treatments (afternoon) and the summing up of the activities with the highlights of the most relevant aspects associated with the exploration of the clays in the context of thermal activity.

With the development of this action, the University of Aveiro team intended to present results in areas not yet studied, such as:

- chemical and organoleptic characteristics of the salt produced using different methods (artisan and with mechanical means);
- The adaptation of natural areas for people with special needs;
- The use of clays for therapeutic and dermocosmetic applications.

This team also hopes that the participants and project partners may function as dissemination agents of the information in their specialty areas, thus creating a multiplier effect that fulfils the ultimate goals of the workshops.

The public of the countries that are part of the project will also have access to the results of the workshops through the dissemination of the reports and documentaries produced that will be made available on the web page of the project, in the various languages of the project (Portuguese, Spanish, French and English).

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Image 6 - Presentations by experts .



Image 7 - Technical visit to Alcafache Thermal Center.



Image 8 - Visit to Santiago da Fonte salt pan.

# Character

## Salicornia

The plants of the *Salicornia* genus are represented by several species in different regions of the world, and are very typical of European and American estuaries and marshes, as well as of tropical mangroves. They belong to a small number of plants - probably less than 2% of all known plant species – that tolerate salinity perfectly, both through tidal immersion or by growing in hypersaline soil. This flora is called a halophyte, which comes from the Greek and literally means a friend of salt.

To resist salt, which is generally known as being a limiting factor for plants, halophytes had to develop very complex adaptive mechanisms in terms of osmotic balance, by concentrating the salt in some particular areas (leaves, fruit). This salt concentration led to its use in a process of recovery of the ashes to obtain soda which was used on a large scale, until the industrialization age, in the glass and soap industry. Nowadays, some species have been grown very successfully for the production of biodiesel.

Altogether the halophyte species of the *Salicornia* genus that grows on the European Atlantic coast has a particularly curious history because of its use in food and has long been known and widespread among the coastal populations of France, England and the Netherlands. This food is also used locally in Italy, Slovenia and Greece. Although so far there is no documentary evidence as such, it is said to have been used by sailors as a source of vitamin C, thus preventing the onset of scurvy. Although this fact may not have historical support it is always a beautiful myth about *Salicornia*.

In Portugal, on the contrary, it has always been an unloved plant by salt-makers, who considered it invasive because a part of the effort of all the cleaning work that had to be done consisted in removing its shoots in the crystallization areas, and it was never used in food or in a medicinal context.

Interestingly, the exchange of experiences promoted by cooperation projects regarding salt extraction and coastal wetlands has led to a change in attitude towards this plant; famous Portuguese chefs have used it in recipes, giving it gourmet status, family companies collect it and put it on sale on the internet; and cultivation experiments have been conducted in the Algarve to facilitate harvesting. Popular and generic names for this type of salt marsh plant - cachelros, gramatas which were considered useless have evolved into a specific designation of salicórnia (from the Latin name), and more sophisticated to espargos-do-mar (sea asparagus) It has been a very positive and happy progression for Portuguese *Salicornia*!



Image 1 - *Salicornia* at Ré Island (France).

Renato Neves

National coordinator of ECOSAL ATLANTIS in Portugal