

THE DRYING OF THE ANTELA LAKE

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I. CHARACTERISTICS OF THE LAKE

The Antela Lake was one of the most important wetlands of Spain until its demise in the late 1950s. It was located in the county of A Limia, in the Galician province of Orense. During the rainy season it had a length of 7 kilometers long and 6 wide, but in summer the water level dropped considerably and this caused its partial drying and its division in several ponds. Generally, the average depth varied between 0.5 and 2 meters, but in some puddles reached maximum of 3 meters.

The lake occupied the central part of a tectonic depression located 600 meters above sea level and was fed by rainwater and seasonal inputs from several streams. These flows formed a pool at the bottom of the mentioned depression and only a small part of them was drained to the Limia River through a stream of 7 kilometers, known as emissary or river of Antela. The reasons for this partial endorheic nature have to do with the reduced slope of the terrain, the narrowness of the emissary and the winding route of the Limia River through the county, factors that hindered the evacuation of the accumulated water.

The environmental value of the lake was based on the large number of ecosystems which converged on it. Within this area, we could differentiate between the permanent waters and the seasonal waters, colonized by underwater vegetation formations, such as rushes and reedbeds. Both served as a refuge for many species of mammals and amphibians, but above all, they welcomed many nesting and wintering birds, like ducks and waders.

One small part of these flows was drained to the Limia River through its tributary, the emissary or river of Antela, giving shelter to a large number of animal species whose habitats are the rivers and the riparian forest strips aligned along their banks. Beyond these riparian strips stretched a great flood plain, populated by herbaceous plants, which was used by the cattle to graze during periods of low water. At the edges of the flood plain were located picturesque villages, surrounded by a patchwork of farmlands and meadows enclosed by hedges. Finally, on the slopes of the mountainous amphitheater that delimited the basin of A Limia appeared groves of oaks and chestnut trees, where the slope of the terrain didn't make possible other uses, such as grazing or cultivation.

II. THE COORDINATED PLAN FOR SANITATION AND COLONIZATION OF THE LAKE

In 1956, the Franco's regime took steps to drain the lake through the enactment of a law on that it declared of high national interest the drying of the lake and established the way to achieve an effective drainage.

The reasons invoked by the Government to justify the drying were diverse: the need to eradicate an unhealthy focus used by vermin for reproduction; the usefulness of put the dried land in cultivation and develop intensive farming to boost economic activity in the depressed county of A Limia; or the opportunity of this performance to settle rural families evicted by the construction of dams in some nearby counties, both in the province of Lugo as in Orense.

The Coordinated Plan for Sanitation and Colonization of the Antela Lake contained all the necessary works to dry the lake, prepare the terrains for agriculture, provide them with an irrigation system and settle the peasants.

The first phase of the plan (1958-1963) was the only one fully implemented. In this phase, the works were aimed at draining the flooded land. To this end, it was built a drain channel across the lake with two branches at its headwater. This channel drained the flows that formed the lake and was connected with the emissary or river of Antela, which was entirely channeled to facilitate the evacuation of the large volume of backwaters. In turn, the Limia River was channeled in a section of 6 kilometers after the inflow point of the emissary. These actions were carried out to ensure the complete drainage of the lake and to avoid any accumulation of water in the lands of Antela.

The second phase of the plan provided the creation of a complex system of irrigation to supply water to the terrains. This system consisted of a reservoir located in an adjacent valley to the Antela valley, a bypass channel with an underground section that made possible the transfer of water from one basin to another, two extensions on that channel along the perimeter of the farmland and a vast network of irrigation channels to distribute water between the plots. Finally, the irrigation system was never implemented because the funds for its construction had to be invested in the drainage infrastructures, which had showed from the beginning serious technical deficiencies. So a group of local landowners, integrated into the Irrigation Community of Antela Zone, decided to install various pumping stations along the drainage channels of the lake to deliver water under pressure to a small sector of the dried area.

The third phase was scheduled to carry out actions related to the colonization of the farmland. However, the additional cost of the plan regard to the initial estimates forced the administration to perform only the most basic works. Lands were divided into plots and prepared for put them in cultivation, but the idea of founding a town to settle foreign peasants was dismissed due to a lack of funds. Instead, the plots were sold at bargain prices to several local farmers because of the low agronomic quality of the soil, so that the profits from the sale represented a fraction of the investment.

III. THE FAILURE OF THE INTERVENTION

The drying of the Antela Lake is considered as one of the greatest fiascos of the Spanish water policy. First of all, previous studies conducted to assess the viability of agriculture in

Antela lacked scientific rigor, because they obviated the harsh limitations that the continental features of climate and the acidic nature of soils impose to the agricultural activity. Most crop plants cannot withstand freezing temperatures and the frost-free period in A Limia covers only the months of June, July, August and September. On the other hand, soil of the lakebed is mainly acidic and very permeable, so it retains with difficulty water and nutrients. As a result, it has a low fertility and a pronounced water deficit.

Secondly, the drainage system showed early technical deficiencies and a complete inadequacy to the hydrological characteristics of the space in which it was installed. The drainage channel was excavated to such depth that it caused a very marked drop of the groundwater table on the farmlands, severely accentuating its aridity in summer. On the contrary, during the rainy winter the narrowness of this channel prevents the complete drainage of rainwater and floods occur year after year at this season.

To correct these construction faults in the drainage network the Government resorted to budget items reserved to the final two stages of the plan, so that once the funds ran out, the administration virtually renounced to build the system of irrigation and the new village. It only prepared and divided the terrains to sell them later.

Therefore, the socio-economic interest of the project was more than questionable, because the farmlands weren't distributed to the peasants affected by the construction of dams, but they were acquired in large lots by the major local landowners, who bought them at ridiculous prices because of their low agronomic quality. The main crop was the potato, a plant well adapted to the acidic soils and whose growing cycle fits perfectly to the short frost-free period. Nevertheless, agricultural activity requires important inputs in irrigation water, fertilizers and pesticides to secure bountiful harvests, which increases considerably the price of the final product, at the time that reduces its quality. In any case, a significant portion of the dried surface was devoted to extractive and industrial uses because the local peasants were not very interested in these terrains.

In addition to its disappointing social and economic results, the lake's drainage caused an environmental disaster. The traditional rural landscape of the county, product of a delicate ecological balance between the physical environment and the human community was dismantled in a matter of few years because of the replacement of the traditional mixed-crop subsistence farming by single-crop potato mechanized agriculture. The diversity of ecosystems was reduced to a monotonous potato field crossed by the tracks which enabled the traffic of farm machines and peppered with industrial estates and sandpits.

