# **Uninhabited territories: contemporary strategies to recover** and preserve abandoned settlements and their areas of influence in Alto Aragón

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**Abstract.** The late but accelerated industrialization of our country in the early 1900's resulted in a polarization of the population movements: while certain cities increased exponentially their number of inhabitants, an important percentage of the territory gradually experienced a consequent depopulation. Whereas the effects of the former phenomenon in the cities have been deeply examined, the impact of the latter in the territory is a relatively unexplored subject, thus full of possibilities. In some areas, the rural exodus was so sudden that the development of their pre-industrial residential schemes froze-up and, thus, the high-value cultural landscape that they take part in remained almost unaltered until today. Most of these abandoned settlements had an intense and balanced relationship with their surroundings. Their location, morphology and the links among them were built upon an environmental friendly and resource efficient basis. This study will focus on the sustainable anthropization of the territory that was performed by these villages, in order to value them as intangible assets and to identify the most feasible strategies to their recovery. As case study, in Altoaragon, we can find no less than 150 abandoned settlements and, in the same territory, almost 30 villages that have been recovered in the last 30 years. Through a comparative study of the latter, we seek to develop generic strategies to help identify, among the former, those settlements or abandoned areas with more potential, and to draw the basic guidelines to restore and protect the preindustrial stage as a whole.

Keywords: Uninhabited territories, Altoaragon, abandoned settelmens, cultural landscape, anthropization

# Introduction

The intensive depopulation phenomenon suffered by the mountain areas of the Iberian Peninsula marked the beginning of its economy's downfall and the abrupt ending of a culture, inherited from the pre-industrial era, based on the exploitation of all available land,.

Voluntary migration (for economic reasons) or forced migration (due to water and reforestation policies of totalitarian ilk) emptied a vast amount of population nuclei throughout the Spanish geography, but this phenomenon

was especially felt in the Altoaragón region. Only in this area, more than 200 population nuclei were abandoned over a period of not more than 80 years (Serrano 2007). The population as a whole dropped by more than half, leaving certain areas practically deserted. .(Ubieto 1983, )

This trend appears to be contained since the 80s; the abandonment of nuclei stops and the population decline slows down. Improved communications, and the development of a better tourist offer begin to attract new visitors and allow the population to settle once again in certain parts of the altoaragonés territory. The rationalization of the Ebro's basin reservoir system, and the gradual abandonment of reforestation policies, serve to expose many of the depopulated hamlets that had remained until then concealed.

In just a few years, dozens of population hubs became visible in more than acceptable preservation conditions, located within some of the most beautiful scenery in the area. The ownership of a good part of the uninhabited nuclei had fallen into the administration's hands, but even those families who still retained ownership of their homes had suffered heavy uprooting. These nuclei stand as frozen mementos of the era of the greatest demographic splendor in the altoaragonés territory, still unscathed by industrialization and the tourism boom.

Over the past 40 years more than 30 of such uninhabited hamlets have been restored and are in the process of recovery. These experiences correspond with public and private initiatives, involve mountain or valley settlements and are absolutely heterogeneous. All of them have meant the revitalization of the population centers and the settlement of new population in a territory that had previously been abandoned. The reoccupation demand, that affects the remainder of the depopulated hubs, never ceases to increase, turning this group of settlements into a cultural landscape of great potential but also one which is especially vulnerable.

The "untouched" state in which these settlements have remained for so many decades makes them an attractive element of great patrimonial value, not just architecturally but also in relation to the territory. The ensemble of all these depopulated villages, grouped according to their geographical location and administrative relations, could serve as a mosaic of cultural landscapes, essential to understanding how our ancestors interacted with the territory.

The main objective of this study will be to catalog and categorize the collection of depopulated settlements in the Altoaragón, as well as to analyze their potential restoration.

The list of depopulated settlements resulting from this work will focus on those that may still retain some recognizable architectural elements and whose original structure is bound to be recognized as an urban setting. The ownership and administrative status of the same must be clear, in order to evaluate any future action.

The selection will result from the grouping of depopulated settlements in relation to their common territorial context or their still recognizable historical interrelations. Contrary to single recovery experiences, commitment to the comprehensive protection and promotion of the cultural landscape invites us to consider the ensemble of villages that fall sufficiently close together as unique scattered settlements.

On the other hand, for the development of indicators that allow us to identify which of the depopulated settlements have greater restoration potential we shall analyze the collection of successful recovery experiences in the late 20th century. We will determine which have been the decisive repopulating factors, as opposed to the rest of the depopulated villages.

We could, therefore, conclude that the study of this group of settlements will remain within three layers of analysis (territorial, administrative and patrimonial) and that this different layer work is the only one capable of reflecting the complexity of the cultural landscape we pretend to describe and encourage.

Despite altoaragonés the territory's peculiarities and the variety and uniqueness of the analyzed cases, the lessons that could be deduced from their analysis pretend to serve as tools and as a basis for later studies that could be applied to other similar territories. It is also understood that all these data will be key to the development of strategies for territorial cohesion.

#### Methodology

The depopulation phenomenon is tremendously complex and abandoned settlements are but one of its consequences. In order to unearth the clues that make this recovery possible we must first understand the reasons behind the abandonment, as well as the specific context in which it took place. The purpose of this study focuses on the abandoned nuclei in

	1860	1900	1998
Unión Europea	18977		116,0
España	29,4	36,5	78,8
Aragón	18,7	19,5	24,8
Huesca	16,8	16,3	13,1
Teruel	16,0	17,0	9,2
Zaragoza	22,6	24,4	48,7
Pirineo aragonés	13,1	12,4	6,0
Jacetania	15,5	15,8	9,2
Alto Gállego	9,6	9,7	8,9
Sobrarbe	10,5	10,4	3,0
Ribagorza	16,2	13,7	4,8

Figure 1 Table of the evolution of population density in Europe-Spain-Aragon (INE-Pinilla,2011)

Altoaragón, within the so-called Mountain Area. Among these we shall choose those still recognizable as settlements. Once the scope of the field of study is clear and has been firmly developed, equivalent recovery cases from the past 40 years have been analyzed, which give us the necessary clues to understanding how these processes work and which aspects favor their progress. Lastly, in light of these cases, indicators have been developed in order to apply them to the whole of the selected deserted nuclei. Conclusions have been drawn from the results thereof.

# The demographic and territorial context. Depopulation phenomenon analysis.

Population movements, which once helped gradually control overpopulation, became massive and definitive in the mid-19th century due to the industrialization of our country (Germán 1995, 19-34). The phenomenon's impact in Altoaragón was of a bigger magnitude than elsewhere on our peninsula due to water and reforestation policies of unprecedented proportions.

In the late 20th century this desertion trend stops, but not the aftereffects of mass migration. The four regions of the Aragonese Pyrenees suffer equally from these depopulation

processes. Jacetania, Alto Gallego, Sobrarbe and Ribagorza encompass almost all the analyzed nuclei within this study.

Depopulation results in great inequality within the country's demographic. Population density on the Aragonese provinces, Spain or Europe, evolves favorably in detriment of these regions with little infrastructure and barely no industry.

### Depopulation's evolution

We could divide the evolution of depopulation, on a temporary level, in four separate stages:

- -18th century and first third of the 19th century; demographic peek of the Aragonese Pyrenees
- -Second half of the 19th century; the onset of industrialization in Spain, and the beginning of economic related migration.
- -First half of the 20th century; the consolidation of industrialization and the onset of water policies.
- -Second half of the 20th century; development of water and reforestation policies; massive buying or expropriation of land by the State.

#### The causes behind depopulation

By that order, the direct or indirect causes of

depopulation could be summarized as:

-The collapse of the artisan economy under the industrial production boom. Industrial development not only invites migration closer to production centers, but it also makes it impossible for handcrafted products to compete in a falling prices market.

-Enforcement of water policies, which translated into the forced expropriation of towns and fertile land, encouraged the dismemberment of local economies and the abandonment of entire valleys. (Herránz 1995, 79-101).

-Enforcement of reforestation policies to prevent reservoir clogging by sediment transport. The slopes by the riverbeds and the fertile areas dedicated to crops are turned into pine plantations.

-The mountain area's own territorial structure of small scattered settlements weakens its reaction capability, moreover once the deeply seated interdependencies and balance start to break. (Hernández 2008, ).

The depopulation of Altoaragón has been a radical and fast process by which, in less than 100 years, a territory changed its social and demographic structure but managed to retain its pre-industrial landscape setup intact.

Scope of the study. Abandoned settlement selection.

The defined field of study includes the entirety of the Aragonese Pyrenees mountain area, in which most of the depopulated hamlets of the Aragonese community are concentrated.

The settlements targeted by our study are not in any case single buildings but hamlets of two or more dwellings, root to any urban reality. By these criteria, 142 of the 200 existing settlements should be regarded as towns and retain sufficient elements to still be recognized as such; the rest are isolated buildings (Pardinas or Mesones) or are so deteriorated that their decay should be considered irreversible.

It is our intention to group certain towns from the selection. The reason behind this resides in an existing land occupation scheme by which nuclei belonging to different geographical areas worked closely linked together. As the settlements were being selected, their different

"spheres of influence" themselves were taking shape. (Serrano 2011, ) If the specialized bibliography is to be considered, each of this groups appeared to operate in a virtually autonomous fashion, with all their communities managing their resources together.

The deserted village final list our work is based on includes: DGA and CHE catalogs from 1986 to 2007, that serve as tools to assess their possessions, as well as photographer Cristian Laglera's own list, gathered for his "despobladosdehuesca.com", he collects the photographs and experiences from visits to the various dwellings within the Huesca province made over the last five years; much more up to date than the administration's own. Nevertheless, all population nuclei have been visited, photographed and cataloged in the hopes of obtaining the most reliable results. It is important to note that all settlements have been legislatively depopulated, and since it is our aim to regulate the reoccupation in accordance to the law, "squatter" settlements will still appear as abandoned nuclei on our list.

Our determination to include the totality of the uninhabited villages in the mountain areas of Huesca makes this study a reference catalog for anyone interested in consulting their current state.

# **Experiences** in the restoration of abandoned settlements

In the 1980s the depopulation of the Altoaragón slows down and some previously abandoned settlements begin to repopulate.

The improvement of communications, the careful exploitation of an untouched landscape and the political backing of the right building policies, have managed to turn tourism into a prosperous affair and also to diversify the economy of the Pyrenees. This new holistic view, respectful of heritage and environment, helps put these settlements back on the map.

This change in landscape didn't occur overnight. It's taken several stages that have gradually cleared the context for reoccupation.

-The suspension of expansive water policies in the Ebro river basin and water level variations on some of the province's reservoirs allow

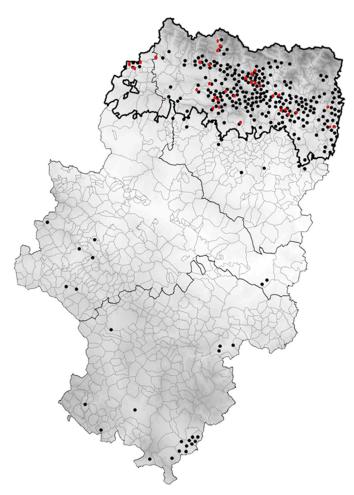


Figure 2 Map of Aragon with the location abandoned and recovered villages, 2012 (own elaboration)

for the recovery of populations that had been flooded over, or the exploitation of cropland that lay submerged until recently.

-The repeal of reforestation policies and the momentum given by the DGA's support towards mountain conservation restores the value of a heritage that was before hidden. (Iriarte 1995, 117-140).

-The improvement of communications and the rise of the country's economic level favor the return of many of those who migrated in the past but didn't lose ownership of their homes.

At the same time these processes were taking place the urban legislative framework and land management has been evolving, adapting to these new phenomena.

"Construir sobre lo construido", Sixto Marín's 2012 Master thesis, analyzed these processes in detail and located the most interesting recovery cases of abandoned settlements from the referenced field of study.

The aspects that proved to be decisive in the recovery of these abandoned settlements and that, at the same time, helped to characterize each of the initiatives were:

-Territorial context: distance to the region's administrative seat, access to major roads or altitude.

-Heritage Value: quantity and quality of cataloged architectural elements with patrimonial value.

-Accessibility: quality of road access.

-Ownership: whether the buildings and surrounding fields are public or private.

-Urban planning: whether the settlement has been included in the municipality's General Planning or the existence of its own specific planning.

-Conservation Level: general conservation state of the buildings and communal urban elements.

In all the studied recovery cases in the Altoaragón, starting conditions ended up proving to be very favorable. Henceforth, we'll incorporate this study's conclusions onto the deserted village ensemble, making use of

GU. GUARGUERA	SOL. LA SOLANA	PUY. PUY DE CINCA	YES. EMBALSE DE YESA
GU.1 ABELLADA	SOL.1 BERROY	PUY.1 CLAMOSA	YES.1 ESCO
GU.2 ABENILLA	SOL.2 BURGASE	PUY.2 LAPENILLA	YES.2 HUERTALO
GU.3 ALASTRUE	SOL.3 CAJOL	PUY.3 PUY DE CINCA	YES.3 SANTA LUCIA
GU.4 ALAVES	SOL.4 CAMPOL	IZ-ME. IZQUIERDA DE MEDIANO	YES.4 TIERMAS
GU.5 AZPE	SOL.5 CASTELLAR	IZ-ME.1 ARASANZ	CAL. EMB. DE CALDEARENAS
GU.6 BAGÜESTE	SOL.6 CERESUELA	IZ-ME.2 MEDIANO VIEJO	CAL.1 ARTASO
GU.7 BESCOS DE GUARGA	SOL.7 GALLISUE	IZ-ME.3 ESCAPA	CAL.2 BARANGUA VIEJO
GU.8 BIBAN	SOL.8 GERE	IZ-ME.4 PLAMPALACIOS	CAL.3 JABARRELLA
GU.9 BINUESTE	SOL.9 GINUABEL	BAR. EMB. DE BARASONA	CAL.4 SIESO DE JACA
GU.10 CAÑARDO	SOL.10 GIRAL	BAR.1 CANCER	FAN. FANTOVA
GU.11 ESPIERLO	SOL.11 JANOVAS	BAR.2 CASTARLENAS	FAN.1 ABENOZAS
GU.12 FABLO	SOL.12 LACORT	TIE. TIERRANTONA	FAN.2 BAFALUY
GU.13 FENILLOSA	SOL.13 LAVELILLA	TIE.1 LATORRE	FAN.3 ERDAO
GU.14 IBIRQUE	SOL.14 MURO DE LA SOLANA	TIE.2 LAVILLA	FAN.4 TORRUELLA DE ARAGON
GU.15 LETOSA	SOL.15 PUYUELO	TIE.3 SOLANILLA (LA FUEVA)	BU. EMBALSE DE BUBAL
GU.16 MATIDERO	SOL.16 SAN FELICES DE CAMPOL	CAN. EMBALSE DE CANELLES	BU.1 POLITUARA
GU.17 MIZ	SOL.17 SASE	CAN.1 CASERRAS DEL CASTILLO	BU.2 SAQUES
GU.18 NASARRE	SOL.18 SEMOLUE	CAN.2 CHIRIVETA	IND. INDEPENDIENTES
GU.19 MORCAT	SOL.19 TRICAS	CAN.3 CHIRO	IIND.1 FRAGINAL
GU.20 OTIN	SOL.20 VILLAMANA	CAN.4 ESTALL	IIND.2 NOCELLAS
GU.21 SAN HIPOLITO	SOB. EL SOBREPUERTO	CAN.5 FET	IIND.3 PATERNOY
GU.22 SANDIAS	SOB.1 AINIELLE	CAN.6 FINESTRAS	IIND.4 TERRAZA
GU.23 SECORUN	SOB.2 AYERBE DE BROTO	CAN.7 SORIANA	IIND.5 SANTA MARIA DE BELSUE
GU.24 TORRUALLA DEL OBICO	SOB.3 BASARAN	NAV. NAVAL	IIND.6 SARRATO
GU.25 TORRUELLOLA DE LA PLANA	SOB.4 BERBUSA	NAV.1 LA PAUL	I-SO. ISIN-SOBREMONTE
GU.26 VILLACAMPA	SOB.5 CASBAS DE JACA	NAV.2 MUELA	I-SO.1 ASQUES
GU.27 VILLOBAS	SOB.6 CILLAS	NAV.3 ROSICO	I-SO.2 ASUN
SL. SANTA LIESTRA	SOB.7 CORTILLAS	NAV.4 SUELVES	AREN. AREN
SL.1 AGUILAR	SOB.8 ESCARTIN	MR. MURO DE RODA	AREN.1 CLARAVALLS
SL.2 CABALLERA	SOB.9 OTAL	MR.1 EL PAMPORCIELLO	AREN.2 COLLS
SL.3 EL MON	SOB.10 SASA	MR.2 FUMANAL	AREN.3 LAS BADIAS
SL.4 LA CORONA (SANTA LIESTRA)	SOB.11 SUSIN	MR.3 LA CORONA (LA FUEVA)	AREN.4 SOLIVA
ESC. EMBALSE DE ESCALES	SOB.12 YOSA DE BROTO	MR.4 MINISTERIO	AREN.5 SOLIVETA
ESC.1 AULET	GAR. LA GARCIPOLLERA	MR.5 MURO DE RODA	AREN.6 SUERRI
ESC.2 CASTROCIT	GAR.1 ACIN	MR.6 LA LECINA (LA FUEVA)	AREN.7 TRESERRA
ESC.3 GABARRET	GAR.2 BERGOSA	GRA. GRAUS	A-SO. ALTO SOBRARBE
ESC.4 OBIS	GAR.3 BESCOS DE GARCIPOLLERA	GRA.1 ALDEA MORA	A-SO.1 BIES
ESC.5 SANTA EULALIA (BETESA)	GAR.4 CENARBE	GRA.2 ARUES	A-SO.2 ESCUAÍN
ESC.6 SOPERUN	GAR.5 LARROSA	GRA.3 GRUSTAN	A-SO.3 MURO DE BELLOS
ESC.7 RALUY	GAR.6 YOSA DE GARCIPOLLERA	GRA.4 PORTAESPANA	A-SO.4 SANTA JUSTA

Figure 3 Summary table of selected abandoned villages (own elaboration)

these factors as indicators that will allow us to quantify and compare their levels of influence.

# Measurement and analysis

Each of the abandoned villages selected got its own file with the most relevant features, drawn from the analysis of the recovered settlement cases, to evaluate their current state in order to draw comparisons.

In order to assess their restoration potential, the most relevant characteristics served as indicators, which made evaluation of their overall impact possible.

At the end, a summary table was produced, compiling and homogenizing the most relevant information from both the population nuclei and the conservation agents involved. This table includes a summary sheet with the indicators' valuations. This makes for a better comprehension of all the compiled data and

the comparison of the various cases. The characteristics or indicators of the restoration potential are grouped under the following headings:

# Relation to the territory

The description of the settlement's geographic environment helps place them in relation to their territory and makes a first assessment of their relationship possible.

We specify:

- -Municipality
- -Region
- -Area of influence
- -Altitude
- -Gradient
- -Distance to municipality's administrative seat
- -Time as municipality's administrative seat
- -Proximity to elements of economic or touristic interest

# Chronological frame

We analyze the population's evolution from the early 20th century until the depopulation's onset, as well as the causes behind this.

These data provides us with information on the level of preservation and ownership of the remains, divided by expropriation, sale or abandonment.

We ascertain:

- -Population in 1900/1950
- -Depopulation date
- -Causes behind the depopulation

#### State of infrastructures

We assess the current state of access and infrastructure, bad or non-existent in general, as depopulation coincided with the rest of the country's infrastructural improvements.

The importance of this summary resides in the fact that all these basic services must be guaranteed if recognition as urban terrain is sought, which could make future investments unviable.

We analyzed:

- -Road access (accessibility)
- -Electricity supply
- -Water supply
- -Sanitation network
- -Telephone communications network

Observed criteria are seen on table 1.

### Ownership and usage

The proprietary rights determine rehabilitation process' timetable; belonging to the Autonomous Region, the Central State, the Town Hall or the Individuals, noting the presence or absence of "squatters" that may interfere with future recovery attempts. Categorization takes into account the potential agility to manage planning.

The area's economic activity and usage could either ruin or guarantee its future development. As a rule it may be cattle farming, agriculture or tourism.

We analyzed:

- -Hamlet's ownership
- -Land ownership
- -Main economic activity

The valuation thresholds are described on table 2.

Building's heritage and degree of general conservation

In so far as heritage protection is among the objectives of the abandoned dwellings' restoration, the listed buildings are accounted for and described, some of which have been declared Sites of Cultural Interest. (Sabaté 2010,).

The assessed potential for restoration will be consistent with the percentage of roofed buildings in relation to the total built surface of the nucleus.

We analyzed:

- -SCI volume
- -Other cataloged properties
- -General state of buildings

We provide the following valuation thresholds on table 3

Table 1

Accessibility		Electricity	Water	Sanitation	Telephone
[0-1 km)	1		1 if available	1 if available	1 if available
[1-5 km)	0.8	1 if available			
[5-10 km)	0.6				
[10-20 km)	0.4				
[20 km)	0.2	0 if unavailable	0 if unavailable	0 if unavailable	0 if unavailable
- km	0.2		una , una o te		ana , anaore

## Planning

The dwelling's restoration potential will be estimated based on the available planning tools. There are certain municipalities with specific plans, which organize and regulate, and others which disregard the existence of these settlements.

We analyze:

- -Hypothetical surface of urban center
- -Specific planning tools
- -Planning development agents
- -Planning by the municipality's head The valuation is seen on table 4.

# Scenic Landscape Assessment

The natural beauty of the surrounding landscape is objectively analyzed based on the

presence or absence of:

- -Natural interest resources, such as:
- a.- Rivers and reservoirs.
- b.- Heritage of mankind areas
- c.- Protected natural spaces
- d.- Reserves of the biosphere
- e.- Natural wetlands network
- -Infrastructural visual impact. Proximity to communication or energy transport networks is deemed disadvantageous.
- -Revitalizing activities or potential for their development. Well-adjusted interactions with nature, past or present, bear a positive value ensuring man's survival on the terrain. Examples: cattle farming, agriculture, controlled tourism.
- -Culture revitalizing heritage and assets. Presence of these resources greatly improves potential, moreover when they may be exploited

$$preserved\ percentage = \frac{\textit{m}^2\textit{of roofed infrastructure}}{\textit{m}^2\textit{built}} = \frac{\textit{m}^2\textit{of roofed infrastructure}}{(\textit{m}^2\textit{of roofed infrastructure} + \textit{exposed})}$$

#### Table 2

Description	Valuation
Town Hall	5
Autonomous Region	4
Hydrographic confederation	3
Mixed	2
Individuals	1
Anyone + squatter	1

#### Table 3

Description	Range	Valuation
In state of total ruin	[0%-20%)	1
Partial ruin	[20%-40%)	2
Stable	[40%-60%)	3
Normal Conservation	[60%-80%)	4
Good conservation	[80%-100%)	5
No data	-	1

#### Table 4

Description	Code	<u>Valuation</u>
Special Plan present	SP	5
There is a municipal General Planning which includes and defines the hamlet	PGOU DEL	4
There is a municipal General Planning which includes the hamlet	PGOU SR	3
There is a municipal General Planning which does not include the hamlet	PGOU NR	2
There is no Planning, subsidiary rules (municipal or extra-municipal), or delimitation plans for urban land.	SP, NNSS, Or PDSU	1
No data	-	1

towards tourism. There are two categories: Site of Cultural Interest and Listed Site.

-Impact of new construction. The way this fits with the surroundings and the respect it shows for the village's essence will be positively valued, as opposed to agricultural constructions with industrial type materials.

The criteria are seen on table 5

#### Results

The data obtained from the study of such characteristics within the defined field of study consists of:

Communities and settlements data sheets. (Figure 4)

A separate data sheet has been prepared for each area of influence, including an orthophotographic map, with the location of the settlements, as well as access and gradient schematics for an easy understanding of their overall arrangement. Along with the graphic data, there is a summary of the most important features in case a detailed study of the area is needed.

Individual settlement data sheets. (Figure 5)

- -Location map within each area,
- -1/2500 scale settlement map, with buildings in ruins outlined and a proposal for delimitation.
- -1/2500 scale ortophotographic map, with a scenic landscape preservation outline.
  - -Three degrees of proximity images:

panoramic (to explain the relationship with the environment), ensemble (to explain the relationships between infrastructures) and detailed (to explain the preservation status)

-Pentagonal diagram. The interior polygon shape will reflect the joint assessment of the following characteristics: the Ownership, the building's State of Conservation, how it fits within the Planning, the General Infrastructure State and its Scenic Value.

A summary graphic sheet (Figure 6)

The restoration potential gathered data, grouped by area.

In light of this, it is clear that each group is extremely heterogeneous when it comes to its nuclei's potential. Therefore, the recovery potential of the whole becomes increasingly complex.

It would most likely be advisable to include any data of territorial nature into the area analysis if integration into a global recovery strategy is to be considered, coupled with the settlement's potential.

#### Conclusion

The ensemble of settlements, still standing though uninhabited since the second half of the 19th century, constitutes in itself a memory of pre-industrial Altoaragón. Its study revealed a varied, intelligent and respectful way to inhabit and interact with the territory. And so we have been able to clearly define the extension, state and potential of the territorial stratum, endemic and intact.

		Table 5			
Resources of interest	Infrastructural impact	Economic activities	Heritage and culture	Impact of new construction	_
1 if available	1 if unavailable	1 if available	SCI rating +	1 not available	
0 if unavailable	0 if available	0 if unavailable	Listed Site	0 if available	

listed site valuation

$$= \frac{number\ of\ listed\ sites\ in\ nucleus}{number\ of\ listed\ sites\ within\ the\ nucleus\ with\ most\ assets} \times 0.5$$

 $TOTAL = (\sum variables) \gg 1$ , o  $1 < 1TOTAL = (\sum variables) \gg 1$ , o 1 < 1

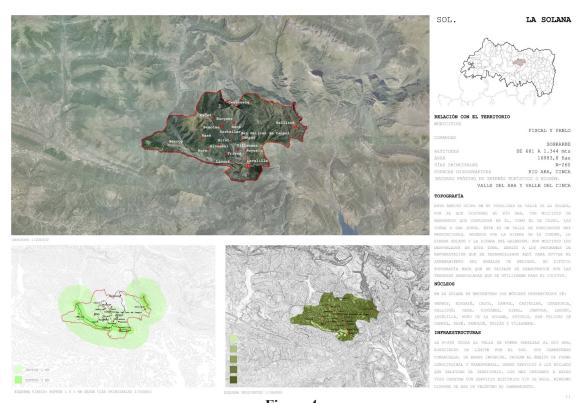


Figure 4 Communities and settlements data sheet (own elaboration)



Figure 5 Individual settlement data sheet (own elaboration)

As a result of the rapid process of depopulation that the altoaragonés territory was subjected to during the previous century, its heritage has remained untouched. This actually provides a unique opportunity for the global approach of preservation interventions or recovery of such heritage.

Over the last thirty years the reoccupation of uninhabited population nuclei has been steady. The study of the circumstances in which these processes have occurred has laid the foundation on which the potential recovery of the ensemble of the still abandoned settlements is based. In light of this comparison, many settlements with a reasonable restoration potential have been detected, as well as others which could easily be strengthened.

Of the total 142 towns studied, 89 have a medium to high restoration potential, while the rest would show objective difficulties for a complete repopulation. Therefore, any realistic goals towards possible actions regarding the abandoned hamlets ensemble should consider adapting restoration strategies based on the individual characteristics and potential of each one, and not so much the complete revitalization of the given area, which still show demographic problems today. Hence, for some settlements there will be a viable rehabilitation whilst others will benefit enough from just the consolidation of their remains. In any case, restoration strategies should make the leap from the individual to the collective. It is only so, that something as valuable as these settlements can be protected; their relationship with their own context and to the surrounding populations.

It has also been revealed that, historically, the towns in the Huesca Pyrenees worked together as scattered habitats but were thoroughly interrelated. The "areas of influence" under which these abandoned settlements have been grouped obey to their territorial and historic links and relations, uncovered by the bibliography.

Man inhabits the territory, but he also exploits and travels across it. The footprint left



Figure 6 Summary graphic sheet (own elaboration)

by his actions, still indelible in these abandoned environments, deserves the same recognition and protection as the settlements themselves.

It hasn't been this study's aim to analyze these areas in detail, beyond their circumscription or the observation of their settlements, but the development of a conservation plan should possess all this information for the complete preservation of the scenic stratum which this heritage is composed of.

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