

# RESILIENCE, REPOPULATION AND RECOVERY OF THE BUILT HERITAGE IN CENTRAL SICILY

Giuseppe Giugno

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## ABSTRACT

This contribution aims to indicate tools and methodologies to be used in formulating a development plan for the inland areas of Sicily which identifies actions and project paths to support the resilient matrix of the cities included in its basin. Among the problems of the territory to be solved, to support its revival according to the principles of reuse, adaptability and sustainability, it is important to identify demographic decline and the abandonment of historic centres. In an attempt to respond to these issues, the depopulation and repopulation of the territory are compared with the similar phenomenon documented in the island in modern times during the foundation of new cities. This experience could, in fact, be useful today to suggest measures against the desertification of urban centres.

## KEYWORDS

resilience, depopulation, abandonment, reuse, built heritage

**Giuseppe Giugno**, Architect and PhD, is a Lecturer in the subject at the Faculty of Architecture of the Kore University of Enna (Italy). He carries out research activities mainly on art, architecture and urban planning of the urban centers of central Sicily. Mob. +39 320/75.30.643 | E-mail: giuseppegiugno\_1@libero.it

In recent years, national legislation has sought to identify solutions that respond to the many problems interesting the internal areas of the country, characterized from the North to the South by the growing phenomenon of depopulation (ANCE, 2017). Specifically, in Sicily demographic desertification, the main cause of the abandonment of territories and historic centres, if not solved with adequate local intervention policies risks, in fact, to determine the total decline of the inner areas of the island over the next decades. The increasing drop in the birth rate, inversely proportional to the mortality rate, and the population emigration have drastically reduced the number of inhabitants of many centres in the provinces of Enna and Caltanissetta compared to the coastal cities, where the transformation of the demographic fabric follows dynamics which are different from the one in the inland areas (Abate, 2006).

The depopulation has triggered processes, in some cases irreversible, of abandonment of historic centres which in most cases have not been followed by actions to recover the built heritage. In other cases, the absence of plans for the recovery of the built-up areas has generated inadequate interventions on the minor historical architecture, expressed in building replacements. Only sporadically the resilient matrix of the city (Colucci, 2012) has been supported by an adequate action of revitalization and enhancement, implemented both on private and public initiative, from which models of creative development emerged to be extended to other portions of the territory (Holling, 1973; Carta, 2013).

To cope with the depopulation of the internal areas and the abandonment of the built heritage, it is, therefore, necessary to set up an intervention strategy, aimed at defining a homogeneous territorial development framework, which is an expression of the joint and synergic work of different institutions and professionals (from the sociologist to the planner). In this regard, it can be useful and propaedeutic to resort to history to give shape to a cohesive plan of promotion and enhancement of the territory that responds effectively to today's problems. Moreover, depopulation and the abandonment of urban settlements are not new problems, but issues already addressed and resolved over the centuries in the island, with effective intervention policies that could still influence the work of public administrators and planners of territorial development (ANCE, 2017).

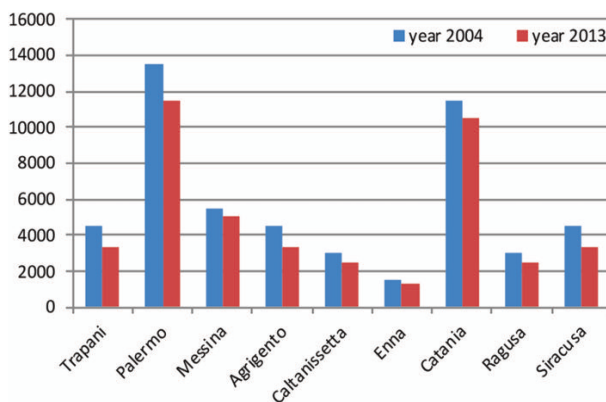
**Analysis and proposals for the definition of a development plan for the centre of Sicily** | Statistical surveys on the whole national territory, showed, in 2016, the existence of 5,591 small municipalities with a population of less than 5,000 inhabitants in each town, where a total of 10,039,829 individuals reside, equal to 16% of the entire Italian population (Table 1). According to ISTAT surveys, the reduction in the demographic number in small Italian municipalities marks a slow and inexorable decline since 1998. In 2016, in fact, an overall loss emerges of 6.5% of the figure recorded in 1998. In particular, the highest rate of population decrease is identified in towns where the population is between 3,001 and 5,000 inhabitants; here the index reaches 7.3% (ANCE, 2017).

Inhabitants	Municipality number	Municipality %	Residents	Resident population %
Up to 1.000	1.966	24,6	1.069.540	1,8
1.001-3.000	2.514	31,4	4.636.721	7,7
3.001-5.000	1.111	13,9	4.333.568	7,2
<b>Up to 5.000</b>	<b>5.591</b>	<b>69,9</b>	<b>10.039.829</b>	<b>16,6</b>
Over 5000	2.407	30,1	50.549.616	83,4
<b>Total</b>	<b>7.998</b>	<b>100,1</b>	<b>60.589.445</b>	<b>100</b>

**Table 1** | Italian municipalities by demographic class (Processing Ance on data ISTAT, 2016).

Province	Municipality	Population	Surface (Km <sup>2</sup> )	Population density (people per Km <sup>2</sup> )
Agrigento	43	448.831	3.053	147
Caltanissetta	22	274.731	2.138	128,5
Catania	58	1.115.704	3.574	312,2
Enna	20	172.456	2.575	67
Messina	108	648.371	3.266	198,5
Palermo	82	1.275.598	5.009	254,6
Ragusa	12	318.249	1.624	196
Siracusa	21	404.847	2.124	190,6
Trapani	24	436.150	2.470	176,6
<b>Sicily</b>	<b>390</b>	<b>5.094.937</b>	<b>25.832</b>	<b>197,2</b>

**Table 2** | Municipalities, population, surface area and density of the Sicilian Provinces (Processing on data ISTAT, 2015).



**Graph 1** | Born in the Sicilian provinces: years 2004 and 2013 (Processing on data ISTAT, 2015).

The dynamics of depopulation are associated with the ageing of the share of inhabitants living in the centres. This trend is reflected in the reduction of the population under 15 years of age and the increase of the population over 65. In this regard, it seems useful to provide a projection by the OECD, according to which in 2050 small municipalities will have 74 people over 65 out of every hundred between 20 and 64 years of age (ANCE, 2017). More detailed analyses allow, specifically, a better understanding of the situation in central Sicily, where the abandonment of historic centres mostly concerns small municipalities founded in modern times and their respective territories. The background to the problem is growing desertification of previously inhabited areas, induced by the lack of employment opportunities and the infrastructural deficit that inhibits any action to support development and growth.

The inland territory of the island includes the provinces of Caltanissetta and Enna. These are, in fact, the smallest, at a demographic level, of the whole island and have a population of 275,000 and 175,000 residents respectively as of 2005. Overall, the inland areas host 9% of the resident population throughout the region (Abate, 2006). This

data is associated with a demographic density taken from the small area unit (Tab. 2), equal to 129 inhabitants per square km in Caltanissetta area and 68 inhabitants per square km in the case of Enna, compared to the Italian average of 194 inhabitants per square km (ISTAT, 2015). The population in the province of Caltanissetta is distributed over 22 municipalities, 12 of which on the date of 2013 do not exceed 5,000 inhabitants. Among the small municipalities, two of them have a population of less than 1,000 residents: Bompensiere, with 594, and Acquaviva Platani, with 993 citizens. In the province of Enna the only municipalities with a population of less than 5,000 inhabitants are Sperlinga, with 1,000 residents, and Cerami with 2,108 (ISTAT, 2015).

As to the dynamics of depopulation, it is known that the demographic index in the two provinces, examined at the date of 2013, compared to 1951, shows a decrease of 28% in the case of Enna and of 8% in the province of Caltanissetta (Abate, 2006). The reason for this reduction is the emigration push with the exodus of a population from the two provinces of 270,000 people between 1950 and 1980. To this must be added a lower birth rate than the mortality rate (Graph 1). The only data in contrast to the demographic decrease indexes is the increase in the immigrant component recorded from 2004 to 2013 in the territory of the province of Caltanissetta which is equal to 6,848 foreigners. The main reason for depopulation is the distance of small municipalities from centres offering basic services in education, health, mobility and with strong potential for the attraction (ANCE, 2017). This is of some help in defining an effective strategy to relaunch the internal areas based on the provision of an adequate system of retrofit and services for training and health in the above-mentioned centres, together with a solid infrastructural apparatus to connect the territory.

To cope with the depopulation of the internal areas of the country, law n. 158 was promulgated on October 6, 2017, called Measures for the Support and Enhancement of Small Municipalities, as well as Provisions for the Redevelopment and Recovery of the Historic Centres of the Same Municipalities. It recognizes the role of protection of each small town with a population equal to or less than 5,000 inhabitants. These regulations aim to enhance the value of small municipalities by supporting the promotion of services related to education, health and social welfare and telecommunications. The law also identifies possible uses of either depopulated or depopulating centres like the creation of widespread hotels. This formula could be recommended indicated when it may be useful to promote the tourism potential of areas with architectural and cultural importance.

To focus the situation of the internal areas of central Sicily, to identify 'pilot' models that can direct and influence the development of other areas, it is useful to refer to some centres that in recent years have been affected by concrete actions of valorization and development. It should be noted, however, that these are isolated examples that have not been conceived as part of a wider territorial revitalization plan. It is, therefore, necessary, according to an approach typical of the new urban hyper-metabolism, to conceive of the territory as an organism in metamorphosis and to look



**Fig. 1** | Panorama of Montedoro (credit: L. Miccichè).



**Fig. 2** | The observatory of Montedoro (credit: [www.stargeo.it/new/Heading\\_Page](http://www.stargeo.it/new/Heading_Page)).

at the models already in place as engines and ‘accelerators’ of a wider and more ramified development (Carta, 2015).

We mention the experiences of the municipalities of Montedoro and Sutera, and the rural village of Santa Rita on Mount Pisciaccane in the province of Caltanissetta. The reflection can also be extended to the province of Agrigento with the mention of the towns of Sant’Angelo Muxaro and Favara. These are ‘virtuous’ examples, where, despite the demographic decline, the absence of services and the infrastructural deficit, an attempt has been made to ‘re-invent’ the territory in a creative key by investing in its resilient matrix. For this reason, the quality of historical buildings, the armour of the cultural landscape<sup>1</sup> (Carta, 2002) and non-material culture have suggested and led to development hypotheses compatible with the nature of the places (Wallach, 2000).

In Montedoro, a municipality with a population of about 1,635 inhabitants and located at a distance of 30 km from Caltanissetta, between the late 1990s and 2000, the development of tourism was promoted through the creation of circuits that put in order the resources of the territory. Material and non-material culture, wisely combined,

have given content to the Open Sky Sculpture Park, to the itinerary of the Museum Houses (a widespread ethno-anthropological museum rich in photographic and multimedia exhibitions), to the Zolfara Museum (dedicated to the writer Angelo Petyx and located on Mount Ottavio) and to the Astronomical Observatory (Figg. 1, 2), which, together with the nearby Planetarium, are an expression and synthesis of the resilience and spirit of 'adaptability' of territories previously devoted exclusively to the cultivation and extraction of sulphur and now reimagined creatively and sustainably (Mami, 2015).

In the municipality of Sutura the old Arabic village, the 'rabato', hosts a living nativity scene that in recent years has become renowned throughout the island (Fig. 3). Also in the province of Caltanissetta, a 19th-century village, located in the former Giuffodraffù Pesceccane feud that belonged to Giovanna Moncada, Princess of Cassaro, has been involved in recent years in the construction of a didactic path which has its heart in the recovery and re-functionalization of an old baronial palace transformed into an Non-material Micromuseum of Wheat and Bread and in the nearby artisan bakery that makes use of only ancient grains of the Sicilian tradition (Fig. 4). The idea that led to the rebirth and enhancement of the village, partially depopulated due to the infrastructural problems that still characterize it, was developed with private capital that transformed the site into a destination for experiential tourism (Scrofani and Leone, 2017).

The same resilient matrix has promoted in the town of Sant'Angelo Muxaro, built on a chalk relief in Agrigento area (Fig. 5), forms of experiential tourism combining local tradition, flavours and development in a formula that brings together the basic elements that characterize its territory: landscape, food and wine and archaeology (Bonini and Pazzagli, 2015). Finally in Favara, always-on private initiative, Farm Cultural Park has been established (Fig. 6). It is neither a museum nor an art gallery, as its creator Andrea Bartoli states, but «[...] a new generation cultural centre, where importance is given to the process and not to the product, to the value of people and not of works. It is a museum of people, of those who want to share time, knowledge, skills, networks, friendships and even economic resources» (Contato and Bartoli, 2015, p. 97).

It is a process that, around the seven courtyards along which the Park is developed, has promoted initiatives for the architectural recovery of abandoned and dilapidated buildings, mostly transformed into accommodation facilities. Where, on the other hand, the development of the smaller centres has not been directed towards sustainable forms of growth, suggested by the identity of the places, neglect, demolition of the historical fabric and inappropriate transformations are responsible for the cancellation of value and architectural quality (Figg. 7-9). These interventions are clear evidence of the consequences of actions without adequate knowledge of the cultural values expressed by the built heritage and represent the denial of the spirit of resilience of historical cities (Carta, 2002).

To better understand the relationship between depopulation of internal areas and resilience it can be useful to refer to other Mediterranean territories, where in recent years the problem has been the subject of analysis and evaluation by experts. In this





context, it may be interesting to look at Spain, in an attempt to identify methodologies and solutions with which to measure and improve levels of urban resilience. The Spanish analysis, conducted on fifty cities, found that the urban resilience index is inversely proportional to population density. For this reason cities with a higher number of inhabitants such as Cádiz, Bilbao and Barcelona are less resilient than inner cities such as Cáceres, Cuenca, Albacete and Badajoz, where the lower population density should be read in relation to territorial areas without any form of widespread urbanisation (Suárez et alii, 2016).

The data deduced from the analyses carried out on the Spanish cities is, therefore, extremely interesting because it explains, even in the Sicilian case, the reasons why, despite the low demographic index, several inland towns of the island have managed to reformulate their economic and cultural development paths, expressing adaptability and resilience to change. It is necessary, however, to try to go beyond the resilience of each urban centre to build a cohesive, organic recovery plan for the entire internal territory, in accordance with the potential of the places and urban bootstrapping (Carta, 2015). This objective appears to be a priority to avoid that the increase of demographic decline and the disintegration of historic centres produce irreversible effects, effectively cancelling out the resilient potential contained in the low population density indices of inland areas.

As the Spanish example highlights, the resilient response of each of the island's internal towns needs to be increased by working on 'diversity', 'modularity' and 'social cohesion' of territories (Suárez et alii, 2016). In fact, the 'diversity' of a territorial structure is the basis of the adaptive capacity to change, but it must be combined with 'modularity', i.e. the presence of diversified and connected territorial structural systems. Together with this, it is necessary to activate networks and relationships between small, medium and large centres; to implement and innovate the infrastructural framework; to re-imagine unitarily and creatively the future of the entire centre of Sicily starting from the knowledge of its nature and potential (Carta, 2002). Cohesion and dialogue between the players in the territory and the stakeholders represent the conditions from which to build, through a multidisciplinary contri-



*Previous page*

**Fig. 3** | A panoramic view of the town of Sutera.

**Fig. 4** | View of the village of Santa Rita at Giuffodraffù Pescecane.

**Fig. 5** | View of Sant' Angelo Muxaro (credit: G. Giugno, 2019).

**Fig. 6** | Farm Cultural Park (credit: G. Giugno, 2019).







**Fig. 7, 8** | Some examples of abandonment and alterations of historical facades in Santa Caterina Villarmosa (credits: G. Giugno, 2019).

bution of town planners, planners, sociologists, economists and public institutions, programme agreements aimed at building a common plan.

Defining a cohesive plan for the development of internal areas, which promotes the recovery and re-functionalisation of abandoned or partially abandoned urban settlements together with their repopulation, cannot disregard the local identity. Material and non-material culture, stratifications and the past represent the platform on which to build progress and future. It can be useful, therefore, to highlight some references to the



**Fig. 9** | Remains of an old building in the historical centre of Barrafranca (credit: G. Giugno, 2019).

problems of depopulation and abandonment of cities already expressed by the territory between the 16th and 18th centuries, the causes of which are in some ways attributable to the roots of the issues prevailing today.

The reference goes, in particular, to the colonization of the Sicilian latifundium which had a considerable development in modern times. It led to the birth of several cities identifiable today in the small and medium municipalities included in the regional provinces examined. Colonising the territory was a priority for the feudal lords since it was a condition for increasing prestige and political power and for encouraging intensive specialised farming in the latifundium. The dynamics of population, defined by viceroyalty regulations, provided for the presence of at least 100 families in each new urban nucleus. Each foundation could be defined as successful if it reached or exceeded this threshold (Davies, 1985; Colletta, 2013).

But to populate a new town it was necessary to develop strategies to support the urbanisation of new inhabitants or the movement of people already permanently resident in other cities from one town to another. It seems useful to refer here to the ‘safeguard pacts’ which guaranteed the so-called ‘settlers’ moratoria on debts incurred in their places of origin and exemption from local taxes for a limited time (Davies, 1985; Romano, 1992). Also, they offered the land for civic use and granted in emphyteusis a plot of land where to build one’s own home and land on which to plant a vineyard (Ligresti, 2002). The populating of new towns was often followed by the reduction of the demographic index in the existing centres, due to the displacement of population in the search for better economic conditions in the new centres. Even in these case, as attested in Caltanissetta in 1614, an attempt is made to solve the problem by using the same strategies implemented for the population of new cities, centred on the definition of a system of fiscal advantages for those who had decided to return to the city.

A good ninety-eight new municipalities were built this way between 1570 and

1663 and this modified the territorial layout of central Sicily, transforming it into a branched district of cities. Through the construction of new cities the population, associated by urban models set on chessboard systems with orthogonal meshes (Misuraca, 1979), is intimately connected to the distribution in the areas close to the new inhabited areas of farms and proto-industrial plants, where the products of the specialized crops conducted in the territory were processed. It is, in short, a model of development centred on the reuse of internal areas which are transformed into centres of development of the island economy.

The displacement of population from one centre to another also led to the abandonment of the built heritage. Ruining a property represented the way to make the effectiveness of the mortgages active on its decay. The problem took on such a dimension that in the 1920s a standard had to be drawn up to promote the recovery of abandoned buildings. The measure, known as the Beni Stabili e Derelitti, spread in the province of Caltanissetta between the Seventeenth and the Eighteenth centuries and introduced, in fact, the practice of expropriation of dilapidated buildings, thus solving the problems associated with the care of decorum so relevant in modern urban culture. Therefore, after certifying its abandonment, the property was confiscated from the owners by the municipality and sold to the public and its sale price was used to pay off the mortgages on it. Not only urban property, but also non-urban property declared to be abandoned were affected by the rule. The private individuals to whom the property was attributed should have restored it (Giugno, 2012).

The strategic guidelines implemented in modern times to concentrate the active population in new cities and the regulations adopted to solve the problems of abandonment of the building heritage can certainly be of use to orient and locally translate what Italian Law n. 158 of 6 October 2017 sets out. Tax concessions for new citizens and those already resident; supplying basic services in the different urban centres and the intelligent, specialist and creative reuse of the territory are the points to reflect upon to give content to a development plan for the internal areas that takes into account the needs of the territory in the light of the potential and resilient and identity matrices of each place.

Moreover, the problem of the recovery of the historic centres is still a 'vexata quaestio' because of the parcelling out of land ownership due to the abandonment of property with the multiplication of migratory phenomena. This problem is only partially addressed by some municipalities such as Gangi and Mussomeli through the concession of houses at symbolic prices. In many other cases, it still paralyzes the recovery of historic settlements. This makes it necessary an immediate action on legislation to adopt new instruments aiming to facilitate the annexation of the abandoned building heritage to the public domain to be recovered with the use of private capital.

**Final considerations and possible future developments** | Reading the demographic, infrastructural and housing conditions of many small municipalities today represents



**Fig. 10** | The descendants of the sulphur mine of Gabbara in the territory of San Cataldo (credit: A. La Rosa, 2019).

the pivot around which administrators and planners must set the directions of a development plan for territory. It is, therefore, necessary to identify financial measures and regulatory instruments that promote cohesion, so that they can be translated into the construction of a logistical, cultural and functional platform, where unexpressed values, resources and potential can be condensed. Access to the ‘resilience’ of each area and the recognition of the ‘adaptability’ of the territories are the conditions through which to direct growth. Widespread initiatives and attempts at dialogue between the various municipalities can be traced back to experiences, which are still underway today, but which must be implemented, strengthened and enriched. The reference goes, for example, to the union of the municipalities called Terre di Collina, made up of Serradifalco, Bompensiere, Montedoro, Delia and Milena, or to the different local development strategies of a participatory type.

The need to ‘recycle’ and reactivate the ‘urban capitals’ (Carta, 2013) and cultural ‘capitals’ present in the identities of places have initiated smart policies for the reuse of the territory that represent clear evidence of the resilient capacity of internal areas based on ‘flexibility’. In other words, a territory is resilient insofar as it does not resist change, but lends itself to policies of redesign and re-imagination aimed at its reorganization and at achieving a new state of equilibrium (Mami, 2015; Suárez et alii 2016).

In an attempt to define an organic development plan for internal areas, it is also necessary to develop a suitable study methodology to measure the resilience of each of the urban centres considered, by quantifying population density, the development of local economies and the social and cultural participation of citizens in the growth of the territory. This action can be carried out, as was the case of the assessment of the resilience of Spanish towns and cities, by declining the parameters listed above in the factors of ‘diversity’, ‘modularity’ and ‘social cohesion’ of the towns and cities within the island’s internal territory. These are the axes to be used to strengthen the resilient growth of the



entire territorial system, through which it is necessary to periodically verify the sustainable and resilient strengthening of the regenerative processes implemented.

An interesting model of new cultural development, of a 'linear' type, around which to hinge and cling to the sustainable growth of several centres, is the Writers' Route that from Agrigento and Caltanissetta – passing through Porto Empedocle and other towns – connects the territory under the common denominator of the literary production of the great Sicilian authors of the twentieth century. The cultural interpretation of the territory can also be validly supported by the national network of Literary Parks and the return to public use of mining routes, such as Gabbara in the municipality of San Cataldo (Fig. 10). In recent years this site has been the subject of an enhancement plan which represents an interesting model of territorial cohesion and partnership between public institutions and private stakeholders.

The thematic path exposed reveals the need to intercept in the identity matrices of the different urban centres the genome of the future development of the territory. This approach obliges planners and legislators to establish the coordinates of the project actions and a revision of the regulatory frameworks contained in the territorial development plans on the certain and solid knowledge of the cultural identity of the territory. In this regard, it would be desirable, that public institutions promote creative territorial regeneration workshops, based on the participatory planning method, in which to condense the contribution of experts and cultural actors of the internal areas, useful to define solid and effective development paths.

The 'linear' cultural development model here indicated could, however, be implemented with the tracing of a new development axis anchored to the geological dimension of the internal areas of the island. The reference goes specifically to gypsum, a mineral used to build entire urban centres over the centuries, from the external plaster of the still existing houses to the same stones of the walls; from the decorations and frontals in scagliola of the churches to the stucco of the aristocracy palaces. There are, in this regard, interesting evidences of the use of gypsum in the artistic production of the mother church of Sant'Angelo Muxaro and unique geological formations of giant dovetail gypsum crystals of sedimentary origin, which have a considerable scientific importance for the international community of geologists, in the archaeological site of Monte Keli in the municipality of Santa Elisabetta (Figg. 11, 12).

Plaster represents, therefore, part of the identity paradigm of inland Sicily and can be a valid response to the problem of depopulation and abandonment of territories. It is possible to bring together values and cultural resources, both material and non-material, around it, generating development and new economies on the model of other experiences already conducted in Italy such as the Regional Park of the Chalk Vein of Romagna. Tracing the new axis of cultural development could, moreover, promote, respecting the landscape values, the return to the production of outdoor plasters according to the use of traditional techniques to be used in the restoration of the abandoned architectural heritage (Mami, 2013).



**Fig. 11** | Giant chalk crystals at the site of Mount Keli in Santa Elisabetta (credit: G. Giugno, 2019).



**Fig. 12** | The Santa Elizabeth Necropolis on Mount Keli (credit: G. Giugno, 2019).

To reverse the depopulation of inland areas and the abandonment of villages and the countryside, it is, therefore, necessary to activate shared and cohesive strategies in the different municipalities, based on the identity of the territories. That's why it is necessary to start from the awareness that the urban capital of the inland areas represents an important 'resilience reserve', with which to orient the development planning of central Sicily sustainably. This is the first step of a process to be structured in methodologically distinct phases and to be subject to periodic audits. Finally, the institutions and the entire human capital of the territory must be involved and new regulatory instruments must be introduced in this process to promote, in the light of the assessments presented, the repopulation and recovery of historic settlements (Martini, 2015).

## Note

1) On the definition of 'cultural landscape', we refer to the Codice dei Beni Culturali e del Paesaggio, Italian D.lgs. n. 42, 22 Gennaio 2004, art. 131. [Online] Available at: [www.beniculturali.it/mibac/multimedia/MiBAC/documents/1226395624032\\_Codice2004.pdf](http://www.beniculturali.it/mibac/multimedia/MiBAC/documents/1226395624032_Codice2004.pdf) [Accessed 8 November 2019].

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