

La cuestión de la identidad como instrumento de reducción de riesgos naturales en pequeños centros históricos

Original

La cuestión de la identidad como instrumento de reducción de riesgos naturales en pequeños centros históricos / Eusebio, Allegra. - ELETTRONICO. - 0:(2019). ((Intervento presentato al convegno Challenges and paradigms of the contemporary city tenutosi a Barcellona (Spagna) nel 2-4 ottobre 2019 [10.5821/ctv.8559]).

Availability:

This version is available at: 11583/2941334 since: 2021-11-29T19:38:16Z

Publisher:

CPSV

Published

DOI:10.5821/ctv.8559

Terms of use:

openAccess

This article is made available under terms and conditions as specified in the corresponding bibliographic description in the repository

Publisher copyright

(Article begins on next page)



THE ISSUE OF IDENTITY AS AN INSTRUMENT OF NATURAL RISKS REDUCTION IN SMALL HISTORICAL CENTRES

Eusebio, Allegra ^{1*}

Initial submission: 2019-06-14; **Definitive submission:** 2019-10-11; **Publication:** 2019-12-21

Citation: Eusebio, A. (2019). The issue of identity as an instrument of natural risks reduction in small historical centers. In *XIII CTV 2019 Proceedings: XIII International Conference on Virtual City and Territory: "Challenges and paradigms of the contemporary city"*: UPC, Barcelona, October 2-4, 2019. Barcelona: CPSV, 2019, p. 8559. E-ISSN 2604-6512. DOI <http://dx.doi.org/10.5821/ctv.8559>

Abstract

The paper presented shows the first results of wider research carried out by the Department of Architecture of Rome Tre, together with the Department of Engineering, Natural Science, Economics and Humanitarian studies, which aims at defining a protocol of natural risk mitigation in historical centers of Italian Inner Areas. In the following lines the attention will be focused on the theme of identity as an instrument of risk mitigation and community engagement, especially in those fragile territories of the Italian Inner Areas.

Italy is, in fact, an extremely heterogeneous and rich country, whose wealth is based not only on the historical and artistic heritage of the big cities, but also on a network of small villages and an incredible variety of territories, most of which are found in Italian Inner Areas, which represent the image of Italian landscape that we all know and love.

These territories, besides being economically disadvantaged, are also located in areas affected by very high natural risk levels, both because of their natural geomorphological conformation and their localization in the Italian peninsula, and because they are affected by depopulation and abandonment phenomena, that inevitably lead to a lack of territorial maintenance.

The National Strategy of Italian Inner Areas aims at reactivating these territories, which have an incredible territorial, historical, and - potentially - economic value, but only marginally deals with the issue of secure their territories, which should instead be considered of primary importance. It is impossible to reactivate an unsafe place, it would therefore be important that smart policies of natural risks mitigation were included in the programme of the National Strategy of Italian Inner Areas, focusing the attention on small historical centres, great heritage in danger.

The research carried out by the Roma Tre University aims at defining a useful and smart process of risk prevention, identifying the steps necessary for correct risk mitigation actions. Starting from this objective, this paper intends to illustrate the role and importance of the recognition of the elements representing identity, within the risk mitigation process, especially in historical centers.

It is common to deal with the issue of identity in post-catastrophe reconstruction phase, when the question is how to reconstruct both the physical heritage and the sense of attachment of the community, destroyed by the disaster. This research tries to move the issue of identity from reconstruction phase to prevention phase, so that alongside preserving strategic elements from a functional point of view, the protection of identity elements is also considered.

Prior identification of identity elements representative of a place and a community, such as a square or a characteristic historic building, could also promote the starting of community participatory project, focalized on the identification of those elements. This would, on one hand, be instrumental to the identification of buildings and useful spaces to save the identity image of the town in the event of a disaster, and, on the other, make the citizens aware of the hazard affecting the place they live. In fact, awareness and knowledge are the first prevention actions.

The methodology is based on an accurate study of risk mitigation actions and instrument currently used, focusing the attention on the role of the Minimum Urban Structure in historical centers, as a tool for seismic risk prevention and emergency management. The issue of identity can be introduced into the concept of Minimum Urban Structure, thus dividing the minimal urban structure into a functional part and into an identity part. However, the research uses the

¹ Roma Tre University, Italy. * Contact e-mail: allegra.eus@gmail.com



concept of minimum urban structure applied to a multi-risk approach, not only associated with seismic risk, and also focuses its attention on the identification of the minimum identity urban structure, omitting the identification of the functional one (already subject of other studies and research).

The study has been validated on Montenero Sabino, a small village in Sabini Mountains, close to Rieti.

Key words: Risk mitigation; Inner Areas; Identity; Minimum Urban Structure

1. Introduction

The heterogeneity and richness of the Italian peninsula is something that, over the centuries, has characterized and made it unique, thanks to an incredibly naturalistic and landscape variety, too big and beautiful historical cities and to a multitude of small centres, equally wonderful and important.

Those small centres, from the second post-war period, have been object of a progressive process of marginalization and de-population, since economic changes, industrialization process and lifestyle modification which affected the peninsula in those years. The configuration of the Italian territory was changing, it started to be organized in some principal centres, which offered a complete set of primary services, with different smaller centres around, presenting different levels of peripherality. Those are the territories of the Italian Inner Areas, together they represent about 60% of Italian peninsula, but with less than 20% of resident population. (UVAL,2014).

However, physical and economic weakness of those centres is not a sign for irrelevance, Inner Areas own an incredible territorial, historical, cultural and artistic heritage. This is the reason why they are object of an enhancement and rehabilitation project, the National Strategy for Italian Inner Areas, aiming at reversing the demographic trend affecting those territories and re-activating their economy.

Italian Inner Areas municipalities are very heterogeneous, but at the same time, they have a lot of similar characteristics: they are all small and medium-small municipalities, which own great cultural and environmental resources, and which are often located in mountainous territories.

Due to their physical localization, together with their characteristics, they are particularly affected by high levels of natural risks. Most of the territories of the Italian Inner Areas are, indeed, located in areas that, thanks to their geo-morphological features, are affected by high levels of natural hazards, mainly seismic and hydrogeological hazard (ISPRA, 2015). The rising of risk levels is also influenced by the lack of territorial supervision from the population, which inevitably leads to a lack of territorial maintenance.

Starting from the study of those territories, and analysing the complex characteristics of their urban and historical centres, as well as the natural hazards and risks affecting them, the research developed a Method of analysis and classification of natural risks in historical centres of Italian Inner Areas.

In the following lines, it will be explained the development process of the Method, which comes from the interpretation of the Risk function, and it is structured in seven different phases, from the analysis on a territorial level to the local one.



The attention will be focused on the fourth phase of the Method, the Identification of the Minimum Urban Structure. Minimum Urban Structure refers to the union of all the functional and identity elements, needed to an urban centre to work properly, and which ensure its positive response in case of a disaster event, and its rapid recovery. It is an instrument for earthquake prevention and emergency planning, actually used in urban masterplans.

One of the points of the research is to demonstrate the value of the integration of identity elements, in addition to the functional ones, into the instrument of the Minimum Urban Structure, and its possible use as a multi-risk mitigation instrument, and not only a tool for managing emergency and reconstruction. Minimum Urban Structure is usually used on urban centres, while the object of this study are small historical centres of Italian Inner Areas; this means there is the necessity of a change in scale, from the urban system to the historical centres system.

The Method has been validated on the small town of Montenero Sabino, a centre close to Rieti, which perfectly represents the characteristics of a lot of centres of Inner Areas. In particular, it will be explained the process to identify the Minimum Identity Urban Structure of its historical centres.

2. Methods and instruments of the research

The study begins with a careful and deep bibliography research, to better understand the “state of art” of natural risk mitigation projects and policies, especially related to the theme of Inner Areas. There has been three main research lines: Italian Inner Areas and the National Strategy, Italian Inner Areas and natural risk mitigation, principal tools and project of risk prevention and mitigation.

Both academic papers and publications, and technical reports have been studied. Reports mainly came from the Italian Agency for Territorial Cohesion, ISPRA – Istituto Superiore per la protezione e la ricerca ambientale (Superior Institute for environmental research and protection), INGV – Istituto Nazionale di Geofisica e Vulcanologia (National Institute of Geophysics and Volcanology) and others research institutes, working on the theme. Data collected on this first phase of the research have been both of technical and methodologic nature.

Technical data have been used to have a complete vision of the status of the territories of Italian Inner Areas, and to produce some hazard maps of those territories. Those maps come from the superposition of different georeferenced cartographies, from ISPRA and Italian Agency for Territorial Cohesion database.

Methodologic data have been used to develop the Method of analysis and classification of natural risks in historical centres, that, in fact, comes from the combination of different instruments and techniques, rearranged and modified to better adapt on the condition of small centres and multi-risk classification. At the same time, on a parallel track, the theme of place-identity was studied, especially focusing the attention on how post-earthquake reconstruction strategies treat the theme. This study was useful to develop the concept of Minimum Identity Urban Structure. Results of the research have been validated on Montenero Sabino, a small centre close to Rieti, that has been chosen as case study, since it is a perfect example of a municipality of Italian Inner Areas.



3. Italian inner areas, the national strategy and natural risks

The definition of Inner Areas comes from a polycentric analysis of Italian territory, characterized by some municipalities – or a system of municipalities – around which areas with different levels of peripherality gravitate. Those principal municipalities are called *providing services centres*, or urban pole, since they have a proper offer of primary services: education, transportation and healthcare. Around these services centres, different smaller centres are located, the so-called Inner Areas, with different levels of peripherality. Their classification comes from the travel times (t) needed to reach the closer service centre (UVAL,2014):

- intermediate areas: $20 \text{ minutes} < t < 40 \text{ minutes}$
- peripheral areas: $40 \text{ minutes} < t < 75 \text{ minutes}$
- ultra-peripheral areas: $t > 75 \text{ minutes}$.

This classification shows that about 60% of Italian territory is part of Inner Areas, but just 20% of the population lives there (UVAL, 2014).

Therefore, Inner Areas can be considered fragile territories, which strongly suffer depopulation and abandonment, and which determine a great social cost because of their conditions, but at the same time, extremely rich of environmental, historical and cultural heritage, with a wide economic potential, unused.

Those are the premises from where, in 2013, the National Strategies for Inner Areas, from the Italian Agency for Territorial Cohesion, was born. The strategy wants to promote territorial cohesion through the implementation of local projects. There is the acknowledgment of the importance of having project deeply focused on the territory and of their different characteristics, but at the same time, never losing the view on the national perspective.

During the research, different projects and models of the National Strategies were analysed, and it appears clear the lack of a common strategy to secure the territory from natural risks. This is particularly important, in general in Italian context, but even more in the territories of the Inner Areas, since the high level of natural hazards and vulnerability of them.

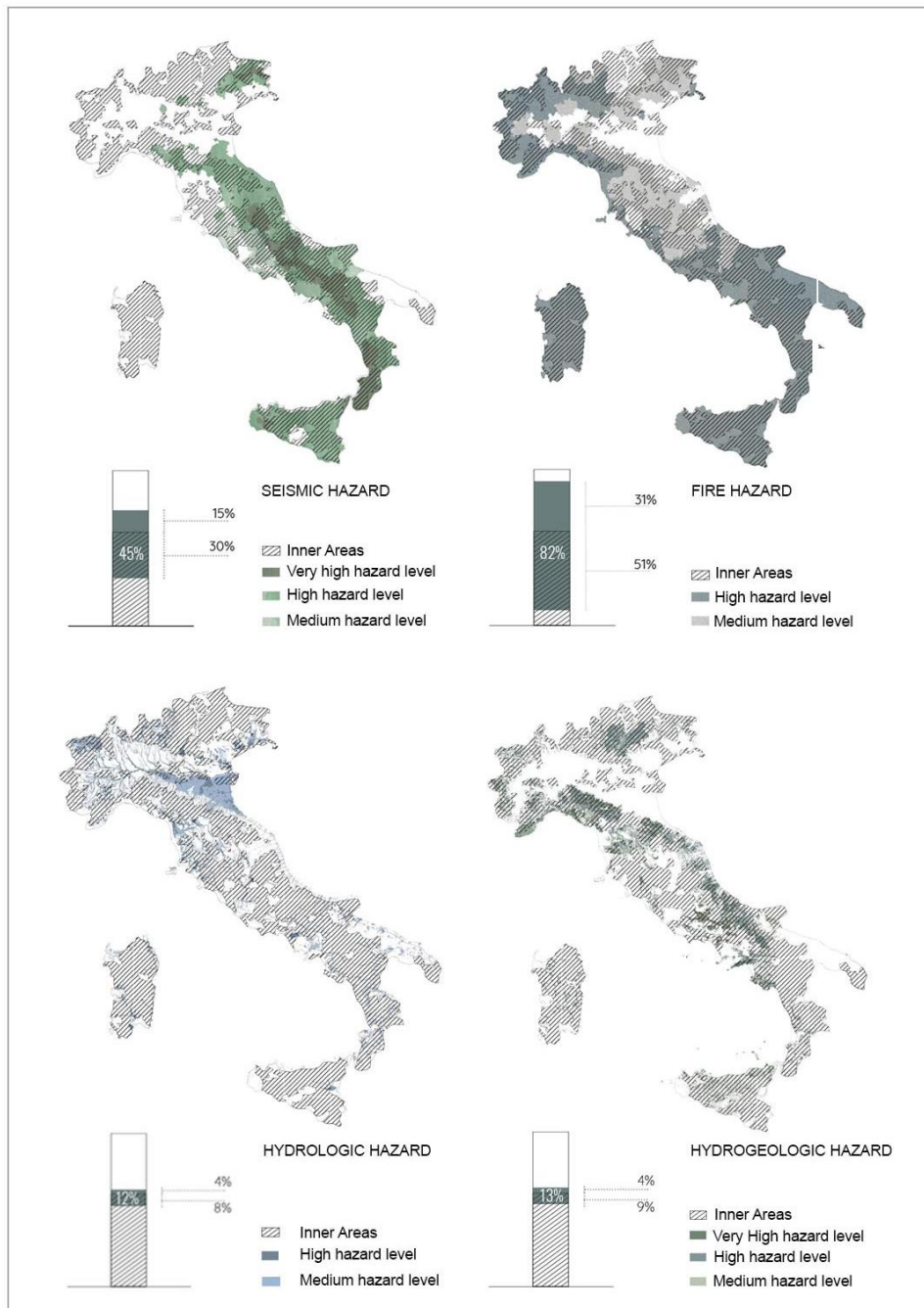
Indeed, one of the preliminary studies that mostly affected the direction of the research was the combination of the analysis of Italian territories with high levels of natural hazards and territories occupied by Inner Areas. It was used a map of the Intermediate, peripheral and ultra-peripheral Inner Ares as a base, overlapping different layers of cartography showing areas with high levels of natural hazards. Specifically, it was analysed seismic hazard, hydrogeological hazard, hydric hazard and fire hazard.

The final products are different cartography, result of personal elaboration of data coming from ISPRA and INGV, showing the big portion of Italian peninsula occupied by Inner Areas Territory with high levels of natural hazards (figure1). There were used:

- seismic classification of Italian municipalities from INGV, considering all the municipality with very high, high and medium hazard level;
- very high, high and medium hydrogeological hazard areas, from the 2015 “Report of Italian hydrogeological instability” from ISPRA;
- civil protection data regarding areas with high and medium fire hazard, from the year 2015.

Reasons of such a territorial configuration come mainly from two factors: first, the geomorphology of the Italian territory which is characterized by a complex orography and by small river basin. Second, territories of Inner Areas are often under populated, with consequences on territorial presidium and maintenance. The abandonment of mountain areas, the lack of wood maintenance, the use of intrusive agricultural techniques, the lack of maintenance of mountainside and rivers, all consequences of an improper territorial presidium, incredibly raise vulnerability levels of those areas.

Figure 1: Italian Inner Areas and natural hazard zones



Source: Personal elaboration from ISPRA and Italian Civil Protection data, 2015



4. The method of analysis and classification of natural risks

Object of the research is the development of the Method of analysis and classification of natural risks in historical centres of Italian Inner Areas.

The method is set on small historical centres, and the aim is to develop an easy and practical instrument for the municipalities and their technicians, to qualitatively assess risk condition, and implement conscious, consistent and strategic mitigation measures. Final step is the definition of a map of intervention priorities in the historical centre analysed, which shows where it is more urgent to operate, in which way, the actors and how to manage the economic resources for prevention.

The definition of the Method comes from the interpretation of risk function; risk is, in fact, the result of the combination of Hazard, Exposure and Vulnerability $R=f(H, E, V)$.

Hazard (H) represents the probability that a certain factor of hazard, of a certain intensity, occurs in a specific area in a given time interval (Profice, 2009). It also depends on three variables: intensity of the disaster, its spatial distribution and the probability of the event happening.

Exposure (E) defines quality and quantity of the elements and territorial systems hit by the hazard (UNISDR, 2009). Quantity refers to the number of assets or activities exposed while quality is about their economic value, their functional dimension and their cultural and historical importance. For example, the quality of a rural area refers to the commercial value of its crop (Profice, 2009).

Vulnerability (V) defines the tendency to be damaged of an element or a system, exposed to one or more hazards (UNISDR, 2009).

The concept of Vulnerability needs a transdisciplinary vision, from technical and scientific subjects, as for instance structural engineering, to socio-economic and anthropologic one. A building with a high-damaged structure will have a high level of vulnerability, as well as an urban centre where the access is possible only through one street. Vulnerability, just like exposure, depends on the element, and can refer both to a single object and a system.

The combination of hazard, exposure and vulnerability gives the classification of risk. Mitigation and prevention projects cannot operate on hazard, that for its own nature is unpredictable and out of control, so they must try to reduce the level of exposure and vulnerability of the elements, to reduce the associated risk. Aim of the Method is to systemize the huge amount of information needed to properly find, analyse and evaluate those elements, to plan and design efficient and coherent mitigation process.

We will then proceed with the identification, within the historical center, of the elements that represent a possible hazard, as well as of the exposed and vulnerable elements, each of these will then be evaluated and will contribute to the final definition of the risk.

The Method is divided into seven phases, which drive you from territorial to local analysis.



Territorial analysis is considered important first because a disaster happening far away can affect directly or indirectly the village object of the study and because the information collected territorially could be instrumental in promoting the formation of associations of municipalities with similar hazards, useful to activate common mitigation actions. It was fundamental to define the boundary of the territorial analysis both on political-administrative relations and on the hazards affecting the area.

On the other hand, local analysis is important because some disaster event, for example landslides, can only be detected with a closer look, focused directly on the analysed area. Phases of the method are listed below; the terminology comes mostly from terms used in urban planning and risk mitigation and prevention project, sometimes reshaped to better fit the use of the research.

1. *Definition of territorial homogeneous areas*, supra-communal areas with similar geological, morphological and hydrological features, invested by the same kind of disaster events, instrumental to create associations of municipality with similar hazards, that could operate common mitigation practises.
2. *Setting the perimeter of the historical centre*, which is, as well, the scope of action.
3. *Definition of Sectors and evaluation of hazard level*, Sectors cover all historical centre area and are areas that, thanks to their geomorphological and settlement features, react homogeneously to a hazard. Evaluation of hazard level is made with the help of evaluation papers, developed during the research, integrating geomorphological and hydrological information, coming from different handbook of geology and soil studies as well as handbook from the Italian civil protection, with information regarding localization and type of urban settlement. Aim of the third phase is to evaluate every sector and assign a hazard level, associated to a score, to each of them.
4. *Identification of Minimum Urban Structure*, that is the union of all the elements needed to an urban centre to work and be alive, and to correctly face an emergency like, for example, an earthquake (Fazio, Olivieri, Parotto, Pizzo, 2010). It is composed by minimum functional urban structure and minimum identity urban structure.
5. *Definition of intervention units and evaluation of exposure and vulnerability level* Fifth phase analyses quantity and quality of the elements of sectors, to divide them into intervention units. The concept of intervention unit is based on the idea of a mitigation action which is designed and conducted simultaneously on all the elements of the unit, the elements composing the unit must be considered as an unbreakable and unique entity, and their division depends both on the hazard and the intervention they are going to need. As in phase three, the evaluation of exposure and vulnerability level is made through some evaluation papers, which analyse the reaction of the construction under the seismic event (since seismic hazard is what most affect Montenero Sabino²). They are developed from the AEDES papers of the civil protection together with studies of urban vulnerability made by professor I. Cremonini. As in phase three, to each intervention unit is assigned a level of exposure and vulnerability, associated to a score.
6. *Risks classification*, that is the absolute evaluation of risk levels of historical centre, made by adding the score from the evaluation of the hazard and of exposure and vulnerability.
7. *Definition of priority intervention ranking*, it consists in developing a ranking based on specific risk level of the historical centre analysed, to understand which interventions are priorities,

² Seismic hazard is what most affected the case study, and the evaluation paper have mostly considered this hazard, but an interesting development of the research could be the elaboration of others evaluation papers, based on different types of hazards.



the timetable of interventions and how to coordinate the economic resources for prevention. Priority levels are four, their score is always different, depending on scores obtained from risk classification. They are obtained by dividing by four the range between the maximum value and the minimum value of risk classification (Intervention Priority IP1 – high priority, Intervention Priority IP4 – low priority).

4.1 Phase four: identification of Minimum Urban Structure

The instrument of the Minimum Urban Structure (MUS) is an existing tool of seismic risk prevention for urban centres and an emergency control system in case of an earthquake. The definition of Minimum Urban Structure refers to the system of strategic streets, spaces, buildings and urban function, useful for a good reaction of the city in emergency time, and for the preservation and quick recovery of ordinary activities, such as economics and social ones, after a seismic event. The Minimum Urban Structure, as it is structured nowadays, represents the essential resistant system of the city after an earthquake (Fazzio, Olivieri, Parotto, Pizzo, 2010). On a legal plan, we find information about the Minimum Urban Structure in the urban regional law of the Italian region of Umbria, L.R. 11/2005, where in the Art.3 the MUS is stated as among the annexes to the General Urban Plan, structural part, and where it is stated that for the elements belonging to the Minimum Urban Structure, intervention of anti-seismic requalification is to be expected.

The Minimum Urban Structure is itself an extremely interesting and useful instrument; the research started from the actual use and definition of it, as well as its legislation, to incorporate it as part of the method, readapting its extension to the small reality of the historical centres of Inner Areas, and trying to consider the totality of natural risks, instead of just the seismic one. First of all, it is necessary to understand why, from the “method point of view”, it is important to define elements belonging to the MUS. As said before, the method is based on risk function $R=f(H, E, V,)$, and it consist in recognizing, into the historical centre system, elements representing factor of hazard, or exposed and vulnerable ones. Then, each of these elements, will be evaluated, on the base of the evaluation papers developed.

Thanks to the high level of systemic importance that the elements belonging to the Minimal Urban Structure play, they will have a high level of exposure. Identifying elements belonging to the MUS, therefore, means identifying particularly exposed elements, which will have the greatest impact on the definition of the risk associated with the intervention unit of which they are part.

Having, therefore, clarified the reason for the importance of defining the Minimum Urban Structure, it is possible to proceed with the description of the parts that compose it and highlight the differences between the instrument proposed in the Method and the existing instrument. As said before, the MUS is composed by a functional part and an identity part.

Minimum Functional Urban Structure refers to all the functional element and spaces of the historical centre, such as main infrastructure and connection streets or important buildings, like schools or the municipality building.

Same importance has the identification of identity elements, which contribute to maintain the vitality and image of the historical centre. Identification process and reasons of importance will



be better described in the next paragraph. The union of the functional with the identity part, gives the Minimum Urban Structure of the historical centre. To adapt this instrument to the needs of the historical centre it is necessary to redefine its extension. The actual instrument of the Minimum Urban Structure is described in the “Guidelines for the definition of the Minimum Urban Structure in General Urban Plan” (Fazzio, Olivieri, Parotto, Pizzo, 2010), and it is considered as the skeleton of the city, a great resistant system of streets and building, able to support the life and vitality in it. The case of the application in historical centers, and especially in the small historical centers of the Inner Areas, obviously presents a different scale, and often, within the only historical center, there will not be the totality of the elements capable of resisting autonomously compared to the rest of the urban system.

Anyway, it is important that the historical centre area is diversified, understanding the presence of buildings and spaces with different levels of importance, and avoiding the historical centre to lose its importance as a “system”, to just be considered as a unique element.

5. Spaces and images to preserve. The importance of the Minimum Identity Urban Structure

The idea on which is based the development of the Method of analysis and classification of natural risks in historical centres is that a deep knowledge of the territories and the places is the fundamental part of a useful instrument of risk mitigation. Knowing, deeply, hazard factors and elements hit, helps in their protection.

Also, the concept of Minimum Urban Structure recognizes the major importance of some elements compared to others, to optimize risk mitigation intervention. Adding identity elements into the instrument of the MUS, therefore, means recognizing the extreme importance of them into an historical centre, both on a plan of risk reduction, and to protect the iconic image of it, and the community who lives there.

Consequently, it is necessary to define what is meant by identity element, and what are the historical and social processes that lead to its determination.

A general definition that can be given to an identity element is a building or a common space, that strongly represents the image of the village into the surrounding landscape and into the imaginary of each inhabitants.

There must be a double point of view; on one hand considering the historical centre as part of a territory and a landscape, to understand the relation between the “manmade” and the nature, necessary to define the final image of the village. A study of the historical and evolutionary dynamics both of the surrounding territory and of the centre is necessary. Indeed, the construction of the identity of a place is the final point of a long process of “*territorialisation*”, result of a complex and stratified overlapping of historical and evolutionary dynamics, of the environment and of the community (Magnaghi, 2001). Studying this evolutionary process, it is possible to identify representative elements and images.

This kind of study is even more important in the case of Inner Areas historical centres. A great territorial heritage, in fact, often belongs to these small centres, thanks to the presence of rich and beautiful historical settlement, into wonderful territories.



Social aspect must be taken into account as well as historical and cultural ones, otherwise the historical centre would be transformed into a small “Disneyland”, a wonderful place, with no social relation within the people who live it and no social spaces to maintain it active and alive. Within the set of elements of the Minimal Identity Urban structure it is therefore important to include also the spaces of relationship and sociality of the historical center. To identify them, the research used some qualitative methods, like interview with people of the village or observation of their habits and routines.

To recognize and identify the identity elements in a risk prevention and mitigation phase, and the consequent protection of them, would help in preventing one of the greatest problems of the post-disaster reconstruction, the reconstruction of the complex urban system of relations destroyed by the catastrophe.

6. Case study: Montenero Sabino

Montenero Sabino is a small village in Rieti district, a city in the North-East of Rome, located in the area of the Sabini Mounts, a mountain range of the Latium Sub-Appennines, which surround the alluvial plain of Rieti.

It is a really small centre, with a population of less than 300 people, half of which does not even live in the village. Montenero Sabino is classified as an Intermediate Inner Area, its reference city is Rieti, provincial capital, which is far about 40 minutes by car.

It has been chosen as a perfect example of the condition of many cities of the Italian Inner Areas: villages with an incredibly rich cultural heritage and landscape value, but isolated and slowly being abandoned from the population.

Montenero Sabino has been used to validate the complete Method of analysis and classification of natural risks, but now the attention will just be focused on the identification of the Minimum Identity Urban Structure.

First step is the study of the evolutionary and historical process which create the image of the village we see nowadays. The village of Montenero Sabino is located in a mountainous area, the Central Sabini Mounts, surrounded by a lot of small villages, with similar characteristics and origin.

It is common, for the villages of the area, to be located on the top of the mountain, similar to fortification, with towers and defensive walls. The origin of this kind of settlement is around year 1000 A.D., the so-called “incastellamento”, when people from the valley move to the top of the mountains for defensive reasons and built castles and fortified settlement. First sign of urbanisation of Montenero Sabino dates those years. The oldest part is the tower with the surrounding walls, as the village was born with a defensive function, being located on the border between two different dioceses. The centre grows over the years, the construction of the Orsini Castle and of the Church of San Cataldo Vescovo ends, and the urbanisation was completed with two narrow lines of row houses. What makes Montenero Sabino unique, is the particular development of its historical centre, that is the result of the interaction with the territory, being Montenero Sabino historical centre located on a ridge.

Figure 2. **General Plan of Montenero Sabino and view from the Orsini castle**

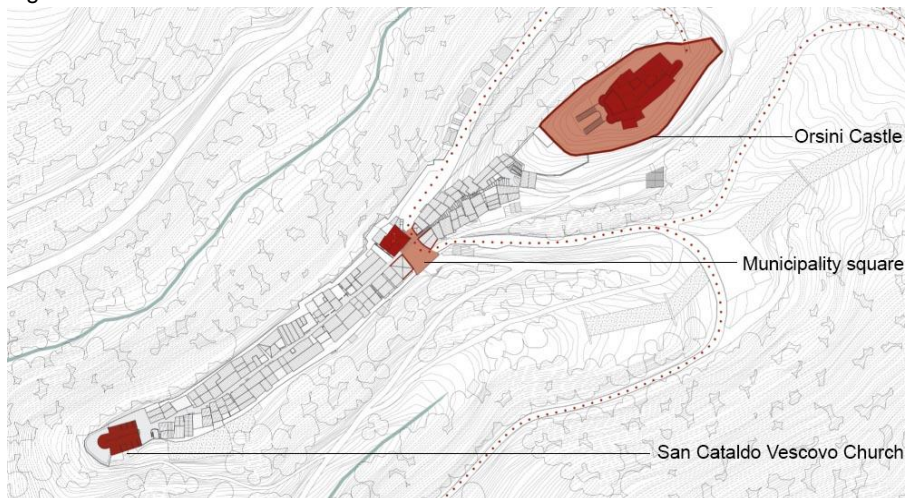


Source: Personal elaboration and photo

Studying the history of the evolution of the centre, it was possible to identify the elements which have mostly contribute to the image: The Orsini Castle, the church of San Cataldo Vescovo and Roma street, the narrow street lying on the ridge. The first problem found was how to put the street into the elements of the Minimum Identity Urban Structure. In fact, the facades of the houses facing the street, define the street, but at the same time, to identify all the facades would have meant identify all the historical centre as part of the Identity MUS, actually losing the point of the instrument. It was then decided to identify as part of it the starting and the ending point of Roma street, which are the Orsini Castle and the church of San Cataldo Vescovo, and also the small Municipio square, being the only square of the village and also the main social space of the historical centre.

In conclusion, the study of the history of the evolution of the surrounding territory and of the center itself, gave us the data to read and identify the main elements that represent the image of Montenero Sabino within the landscape, and the observation of social dynamics and the interaction with the resident population gave us the data to identify the main relationship spaces of the center. The union of those identity elements with the functional ones, gave us the Minimum Urban Structure of the historical center of Montenero Sabino.

Figure 3. **Minimum Urban Structure of the historical Centre of Montenero Sabino**





Source: Personal elaboration and photo

7. Conclusion

Conclusions coming from the observation of risk condition of Italian Inner Areas territories show the need to integrate the National Strategies of reactivation and repopulation of those territories, with a systematic and well-designed strategy to secure them.

It must come from a deep and complete knowledge of the territories and of the centres analysed, so that risk mitigation strategies can be adapted on the condition of each different local reality.

The aim of the Method of analysis and classification of natural risks on historical centre of Italian Inner Areas is to develop a simple and practical instrument to qualitatively assess risks condition in historical centres, and implement conscious, consistent and strategic mitigation measures.

The role of the minimum Urban Structure is particularly important, especially the Identity part, since it allows to integrate elements belonging to the intangible heritage, such as identity elements, into a technical instrument of risk evaluation, and to consider their importance on the same level of others more “physical” factors, like, for instance, the structural vulnerability of a building.

Furthermore, the research tries to explain that the preliminary identification of identity elements, could help in the post-disaster and reconstruction phase, mainly for two reasons: first of all, since it takes a picture of the social and historical relations characterizing the place in the pre-catastrophe phase, which could help in reconstructing those relations in a post-catastrophe phase, and also because the knowledge of those relations and of the elements representing them, can help in providing mitigation measures to preserve them.

Taking into account the kind of evaluation proposed by the Method, the elements belonging to the Minimum Urban Structure, due to their high systemic importance for the historical centre, have high levels of exposure, which leads to a raising in risk levels. Risk in, in fact, the result of a function, combining Hazard, Vulnerability and Exposure, higher is the Exposure of an element, higher will be the associated risk.

To identify the Minimum Identity Urban Structure helps in understanding the importance of the image of an historical centre among the landscape, in identifying its characteristic identity and



community elements, and the complex relationship between the community and the place, to preserve them, through conscious mitigation action.

Conflict of Interest: The author declares no conflict of interests.

Bibliography

AA.VV. 2014. Strategia Nazionale per le aree interne: definizione, obiettivi, strumenti e governance. *Materiali UVAL*

MISRAS Project, 2012, *Handbook: mitigating spatial relevant risks in European regions and towns*, Retrieved from: <http://www.itineris.nl/wp-content/uploads/2015/10/Handbook-MiSRaR-English.pdf>

ISPRA, 2015, *Rapporto sul dissesto idrogeologico in Italia*, Roma. Retrieved from: http://www.isprambiente.gov.it/files/pubblicazioni/rapporti/rapporto-233-2015/Rapporto_233_2015.pdf

Cangi G. 2012, *Manuale per il recupero strutturale antisismico*. Roma, Italia, DEI

Protezione Civile 2007, *Manuale per la predisposizione di un piano comunale ed intercomunale di protezione civile*, Roma, Italia.

Protezione Civile 2008, Scheda di primo livello di rilevamento danno, pronto intervento ed agibilità per edifici ordinari nell'emergenza post-sismica. AeDES, 06/2008 Retrieved from: http://www.protezionecivile.gov.it/resources/cms/%20documents/Scheda_AEDES.pdf

Cremonini I. 2004, *Analisi, valutazione e riduzione dell'esposizione e della vulnerabilità sismica dei sistemi urbani nei piani urbanistici attuativi*. Bologna: Regione Emilia-Romagna, Servizio Rigenerazione Urbana

Di Cunto, G. 2016. *Identità, luoghi e comunità nella ricostruzione post-catastrofe. Riflessioni a partire dai casi dell'Irpinia e del Maule*. Master thesis, Department of Architecture, Roma Tre University, Roma, Italia

Di Giacomo M. 2014, *I costi dei terremoti in Italia*. Roma, Consiglio Nazionale degli Ingegneri, Retrieved: https://www.tuttoingegnere.it/images/News/2016/I_costi_dei_terremoti_in_Italia.pdf

Fazio F., Olivieri M. Parotto R., Pizzo B. 2010, *Linee guida per la definizione della struttura urbana minima nei PRG*. Roma, DPTU, La Sapienza University

Falcetti S. 2008, Guida a un itinerario nella Piana Reatina e nella città di Rieti. Aspetti geologici e idro-geologici di un territorio ricco di storia e cultura. *Memorie Descrittive della carta geologica d'Italia*, n. 102/2014 pp. 73-86, ISPRA, Roma

Giuffrè A. 1998, *Studi e ricerche sulla sicurezza sismica dei monumenti. Centri storici in zona sismica: analisi tipologica sulla danneggiabilità e tecniche di intervento conservativo. Castelvetero sul Calore*. Roma: Department of Structural and Geotechnical Engineering, La Sapienza University

Marconi P., Piepoli P. 1996, *Cenni sulla storia geologica del territorio*, in: AA.VV. *Il territorio della media Valle del Tevere. La pianificazione territorial comprensoriale*. Roma: Institute of urban and technical planning research, Faculty of Architecture of Roma Tre University



Magnaghi, A. 2001. *Una metodologia analitica per la progettazione identitaria del territorio*. In Magnaghi A., *Rappresentare i luoghi, metodi e tecniche* (pp.7-52), Firenze, Italia: Alinea

Presidenza dei Ministri 2017, *Struttura di Missione Casa Italia, Rapporto sulla promozione della Sicurezza dai Rischi Naturali del patrimonio abitativo*, Roma. Retrieved from: http://www.governo.it/sites/governo.it/files/Casa_Italia_RAPPORTO.pdf

Profice A. 2011, *Rischi, governo delle trasformazioni urbane e sostenibilità*. Phd tesis. Napoli: Department of Urban Planning and Science, Federico II University

Silvestri F. 2012, *Il rischio sismico nelle Aree Interne: previsione e prevenzione*. Proceedings of the conference: *Le Aree Interne: nuove strategie per la programmazione 2014-2020 della politica di coesione territoriale*. Roma, Italia