# EARTHQUAKE RISK PERCEPTION, COMMUNICATION AND MITIGATION STRATEGIES ACROSS EUROPE

Piero Farabollini, Francesca Romana Lugeri, Silvia Mugnano
Editors



Geographies of the Anthropocene







#### Geographies of the Anthropocene

Open Access and Peer-Reviewed series

**Editor-In-Chief:** Francesco De Pascale (CNR – Research Institute for Geo-Hydrological Protection, Italy).

**Co-Editors:** Marcello Bernardo (Department of Culture, Education and Society, University of Calabria, Italy); Charles Travis (School of Histories and Humanities, Trinity College Dublin; University of Texas, Arlington).

Editorial Board: Mohamed Abioui (Ibn Zohr University, Morocco), Andrea Cerase (Sapienza University of Rome, Italy), Valeria Dattilo (University of Calabria, Italy), *Chair*, Dante Di Matteo (Polytechnic University of Milan, Italy); Jonathan Gómez Cantero (University of Alicante, Spain; Young Scientists Club, IAPG), Nguvulu Chris Kalenge (University School for Advanced Studies **IUSS** Pavia, Italy), Battista Liserre (Aix-Marseille University, Campus ESSCA, France), Giovanni Messina (University of Palermo, Italy), Gaetano Sabato (University of Catania, Italy), Carmine Vacca (University of Calabria, Italy).

International Scientific Board: Marie-Theres Albert (UNESCO Chair in Heritage Studies, University of Cottbus-Senftenberg, Germany), David Alexander (University College London, England), Loredana Antronico (CNR – Research Institute for Geo-Hydrological Protection, Italy), Lina Maria Calandra (University of L'Aquila, Italy); Salvatore Cannizzaro (University of Catania, Italy), Fabio Carnelli ((Polytechnic University of Milan, Italy); Carlo Colloca (University of Catania, Italy), Gian Luigi Corinto (University of Macerata, Italy); Roberto Coscarelli (CNR – Research Institute for Geo-Hydrological Protection, Italy), Sebastiano D'Amico (University of Malta, Malta), Armida de La Garza (University College Cork, Ireland), Elena

Dell'Agnese (University of Milano-Bicocca, Italy; Vice President of IGU), Piero Farabollini (University of Camerino, Italy), Giuseppe Forino (University of Newcastle, Australia), Virginia García Acosta (Centro de Investigaciones y Estudios Superiores en Antropología Social, CIESAS, México); Cristiano Giorda (University of Turin, Italy), Giovanni Gugg (University of Naples "Federico II", Italy, University of Nice Sophia Antipolis, France), Luca Jourdan (University of Bologna, Italy), Francesca Romana Lugeri (ISPRA, University of Camerino, Italy), Fausto Marincioni (Marche Polytechnic University, Italy), Cary J. Mock (University of South Carolina, U.S.A.; Member of IGU Commission on Hazard and Risk), Francesco Muto (University of Calabria, Italy), Gilberto Pambianchi (University of Camerino, Italy; President of the Italian Association of Physical Geography and Geomorphology), Silvia Peppoloni (Istituto Nazionale di Geofisica e Vulcanologia, Italy; Secretary General of IAPG; Councillor of IUGS), Isabel Maria Cogumbreiro Estrela Rego (University of the Azores, Portugal), Andrea Riggio (University of Cassino and Southern Lazio, Italy; President of the Association of Italian Geographers), Bruno Vecchio (University of Florence, Italy), Masumi Zaiki (Seikei University, Japan: Secretary of IGU Commission on Hazard and Risk).

**Editorial Assistant, Graphic Project and Layout Design:** Franco A. Bilotta;

 $\textbf{Website:} \ www. ilsileno. it/geographies of the anthropocene;$ 

The book series "Geographies of the Anthropocene" edited by Association for Scientific Promotion "Il Sileno" (Il Sileno Edizioni) will discuss the new processes of the Anthropocene epoch through the various worldviews of geoscientists and humanists, intersecting disciplines of Geosciences, Geography, Geoethics, Philosophy, Socio-Anthropology, Sociology of Environment and Territory, Psychology, Economics, Environmental Humanities and cognate disciplines.

Geoethics focuses on how scientists (natural and social), arts and humanities scholars working in tandem can become more aware of their ethical responsibilities to guide society on matters related to public safety in the face of natural hazards, sustainable use of resources, climate change and protection of the environment. Furthermore, the integrated and multiple perspectives of the Environmental Humanities, can help to more fully understand the cultures of, and the cultures which frame the Anthropocene. Indeed, the focus of

Geoethics and Environmental Humanities research, that is, the analysis of the way humans think and act for the purpose of advising and suggesting appropriate behaviors where human activities interact with the geosphere, is dialectically linked to the complex concept of Anthropocene.

The book series "Geographies of the Anthropocene" publishes online volumes, both collective volumes and monographs, which are set in the perspective of providing reflections, work materials and experimentation in the fields of research and education about the new geographies of the Anthropocene.

"Geographies of the Anthropocene" encourages proposals that address one or more themes, including case studies, but welcome all volumes related to the interdisciplinary context of the Anthropocene. Published volumes are subject to a review process (double blind peer review) to ensure their scientific rigor.

The volume proposals can be presented in English, Italian, French or Spanish.

The choice of digital Open Access format is coherent with the flexible structure of the series, in order to facilitate the direct accessibility and usability by both authors and readers.

# EARTHQUAKE RISK PERCEPTION, COMMUNICATION AND MITIGATION STRATEGIES ACROSS EUROPE

### Piero Farabollini Francesca Romana Lugeri Silvia Mugnano

**Editors** 





#### **CONTENTS**

| Prefac | 8 8   |
|--------|---|
| Introd | duction 12  |
| Sectio | n I   |
| Mitiga | ation Strategies of Seismic Risk  |
| 1.     | Urban Seismic Risk Reduction and Mitigation Strategies in Turkey Ahmet Anıl Dindar, Cüneyt Tüzün and Aybige Akinci 19     |
| 2.     | A Collection of Statistical Methods for Analysis of the Disaster Damages and the Seismic Regime                           |
|        | Vladilen Pisarenko, Mikhail V. Rodkin 43  |
| 3.     | Turkey's Earthquake History and Institution Based Earthquake Reduction Policies and Strategies                            |
|        | Alper Uzun, Burak Oğlakci 64  |
| 4.     | Risk Mitigation through Local Building Knowledge: Turkish Van<br>Region Case Study  |
|        | Chiara Braucher, Mattia Giandomenici 84   |
| Sectio | n II  |
| Comm   | unication and Prevention Strategies of Seismic Risk   |
| 5.     | Communication-Based Prevention Strategies: A Draft Model<br>Proposal  |
|        | Andrea Volterrani 105   |
| 6.     | Geoscientists' Voice in the Media: Framing Earth Science in the Aftermath of Emilia 2012 and Amatrice 2016 Seismic Crises |
|        | Andrea Cerase 123   |
| 7.     | The 2016 Earthquake in Central Italy. The Alphabet of Reconstruction <i>Piero Farabollini</i> 145                         |

| 8.      | of 24 August 2016 in Central Italy  Fausto Marincioni, Eleonora Gioia, Mirco Zoppi,                      |      |  |
|---------|--|------|--|
|         |  | 72   |  |
| Section | n III  |      |  |
| Resilie | ence and Post-Disaster Recovery  |      |  |
| 9.      | An Historical Flight and Some Open Questions towards a Pluralis but Holistic View of Resilience          | stic |  |
|         | Maurizio Indirli   | 94   |  |
| 10.     | Earthquakes and Society: the 2016 Central Italy Reverse Seisi Sequence                                   | nic  |  |
|         | Piero Farabollini, Serafino Angelini, Massimiliano Fazzini,<br>Francesca Romana Lugeri, Gianni Scalella, |      |  |
|         | GeomorphoLab 2   | 249  |  |
| 11.     | Second Home Holidays Makers Recovery After a Disaster: Insig from the 2016 Central Italy Earthquake      | ;hts |  |
|         | Silvia Mugnano, Fabio Carnelli, Sara Zizzari   | 267  |  |
| 12.     | . Assessing Resilience of Mountain Communities Hit By The Centr Italy Earthquakes of 2016                | al   |  |
|         | · · · · · · · · · · · · · · · · · · ·  | 285  |  |

The Authors

# 11. The recovery strategy of second homeowners and tourists after a disaster: insights from the 2016 central Italy earthquakes

Silvia Mugnano<sup>1</sup>, Fabio Carnelli<sup>2</sup>, Sara Zizzari<sup>3</sup>

#### **Abstract**

Between August and October 2016, 131 municipalities in central Italy were severely hit by a series of earthquakes. Although official data on properties in those municipalities is scant, this area is generally acknowledged as a second home tourist destination. The impact that the earthquake has had on this very peculiar and interesting local community is worth to explore because it highlights the particular role that long stay tourists, the home holidays makers, might have in case of a social, physical and economic disorder provoked by a socio-natural disaster. The aim of this chapter is to discuss what needs to be tackled by response and recovery disaster management policies when second homes are involved, by considering also expectations and intentions of the affected owners with regards to tourists needs included in the redevelopment plans. This research uses a mix methodology combining geo-referenced 2016 Copernicus and 2011 Census data to geo-mapping second homes tourism and qualitative in-depth interviews with 20 second home owners and policy makers in Amatrice (one of the worst affected townships) to explore the role that they have been playing in the different phase of the disaster cycle.

**Keywords:** Disasters, second home, families ties, temporary inhabitant, reconstruction policies

<sup>&</sup>lt;sup>1</sup> Università di Milano – Bicocca, Milan, Italy, e-mail: silvia.mugnano@unimib.it.

<sup>&</sup>lt;sup>2</sup> EURAC Research, Bolzano, Italy, e-mail: fa.carnelli@gmail.com.

<sup>&</sup>lt;sup>3</sup> Università di Milano – Bicocca, Milan, Italy, e-mail: sara.zizzari@unimib.it.

#### Introduction

As well known, tourism is not immune by disasters: as already noted, they can be seen as interlinked processes (Mugnano & Carnelli, 2016): the tourist industry and tourist destinations can be affected by every phase of the disaster cycle. Both tourism disaster management should account for disaster risk reduction measures (Faulkner, 2001) and a tourist destination can be either positively or negatively influenced by a disaster, depending on local contexts, vulnerability issues and the disaster phase itself (Mugnano & Carnelli, 2016; Cohen & Cohen, 2012). What usually emerges from the literature, as being quite unexplored, are the needs of the tourist population before, during and after a disaster: this may be a consequence of the tourist population as seen as a separate population from the locals, which are usually the target of disaster risk reduction ad recovery efforts and policies. As we will discuss in this chapter, the interaction between second home tourism and an earthquake can unveil and follow different logics. Second home residents are a very peculiar population. The fact that they have the administrative residence in another place, that they use the second home some period of the year (weekly, seasonally), make them be considered as tourist. On the other side, it cannot be eluded that a large number of the second home residents can be considered (or they consider themselves) "temporary residents". The choice of buying a holiday house is not only an economic investment but is a psychological, social and emotional choice. The literature debate on tourism and disaster strongly argues that tourists are more vulnerable then locals in case of a disaster because «they are less familiar to local hazards and the resources that can be relied on to avoid risk, and they are less independent» (Faulkner, 2001, p. 22). In the same line, the local knowledge is not only a resource of the residents but can be a shared cultural heritage with other populations. Indeed, the second home residents might have developed through years a place attachment, a local social capital and important know how on the territory. Often, in the process of electing the destination for settling the second home, those temporary residents have developed an accurate and specific curiosity on the territory. Some second home residents have a deep knowledge and interest on the local history, on the geological morphology on the local tradition and so on. In addition, in Italy, as well as in most of countries that have experienced a rather recent process of urbanization, the phenomenon of second home is often the effect of an intergenerational transmission of housing assets. Properties often located in rural and not urbanized areas might have belonged to the families for generations. And one's upon a time, before the strong process of urbanization, it might have been the main residence for the family or the relatives. So, tourist second homes might also have had an affective value because represent the roots of their families, and it can take the shape of a specific segment of tourism called root tourism.

The central Italy 2016 earthquakes is certainly and interesting case study to investigate this interesting interconnection between a disaster, second home residents and the root tourism dynamics. Is it true that second home residents are fragile tourists or they can become resourceful actors in the different phase of the disaster cycle? Focusing on Amatrice - one of the places most affected by the earthquakes - this work aims to analyze the role that home holiday makers have played and are playing in reconstructing the social, political and physical domains of the local community. Due to the scare data of the phenomenon of second homes in Italy, and in particular those affected by the natural disaster, the chapter proposes proxy estimation of the phenomenon in the area of Amatrice by cross-referencing data produced by *Copernicus*, the European satellite system for detecting damage caused by disasters, and the census of empty home. This proxy estimation provides the context scenario within which a qualitative fieldwork was conducted in July 2017<sup>4</sup>.

#### 1. Second home tourism and disasters: Italy as a case study

It is only in recent years that second tourist houses are emerging as a matter of academic relevance (Hall & Müller, 2004; Roca, 2013; Hall, 2014). Research on second homes has been conducted from a wide variety of disciplinary perspectives and consequently has addressed numerous themes, such as their implications for: household behavior, leisure spaces and consumption (Kaltenborn & Bjerke, 2002); tourism, urban–rural interaction,

<sup>&</sup>lt;sup>4</sup> The research team -composed by F.Carnelli, M.Migliore, S.Mugnano, S.Zizzari- has conducted 20 interviews with owners of damaged second homes in Amatrice or in the nearby areas; institutions, associations and institutions for tourism promotion. The research has been possible thanks to the *Quota Competitiva* UNIMIB funds. The research is part of a larger project called Emidio di Treviri. A special thank you should be direct to *Brigate di Solidarietà Attiva* (BSA) without whom the fieldwork could not have been possible.

retirement and seasonal migration (Williams and Hall 2000), and for social structures, housing markets and landscapes in districts where second homes are concentrated (Skak, 2004). Among the topics covered so far, the concepts of "home", "mobility", "planning" "governance" and "policy" have been analyzed in relation to some dimensions, including environmental, social and, of course, housing (Hall, 2014; 2015). Mobility and place attachment should be central elements of a local governance taking into account second homes: with the wit do not originally come from the area» (Rey-Valette et al., 2014, p. 36). On the contrary, on the one hand some research shows how the behavior (and social vulnerabilities) of tourists and residents in facing a disaster can be different (Mugnano & Carnelli, 2016). On the other hand, the phenomenon of second tourist homes is usually neglected by housing policies, urban planning, real estate market regulations, but also by territorial development plans, especially and paradoxically related to economic activities related to tourism (Roca, 2013).

This absence is even more marked if public policies concern post disaster reconstruction, where no distinctions is made among the different typologies of tourists. The length of time spend or the periodicity of the visits in the same tourist destination definitely have a different impact on the type of tourisms' engagement with local community. In this prospective the case of second home is surely an interesting perspective of research.

The second house usually refers, even if the literature in not so precise on this topic, to a dwelling that is not a person's main residence, used by tourists in the leisure time and in particular periods of the year and that remain empty for majority of time (Hall, 2014a).

Armondi (2011), among others, using a definition of second home proposed by Pardoe, defines it as:

«a static property, which is the alternative residence of a family, the main domicile of one who usually lives elsewhere, intended by the members of that family primarily for entertainment and recreation» (Armondi, 2011, p.149).

Although in Italy (Ferrero, 1998) it is almost impossible to make a precise estimation of the phenomenon, we can argue that a proxy calculation of the phenomenon can be made. Based on the latest census, it can be assumed that in Italy approximately 7.000.000 dwellings are un-occupied either empty or occupied by people who are not permanently residents, among which only 2 million can be classified as second homes. The 2 million are in fact either

located in urban context and can be consider a form of investment or located in rural areas or territories with a low density (3 million) The housing market of the second home sector follows differ dynamic compared to other sector of the market. According to the data on second holiday homes between the 2016-2017 the sell and buy transitions have increased of 3.5% even though this trend is not homogenous across the country. Some distinction can be made between the different touristic destinations: the seaside and lake destinations are still quite attractive (+4.8%) while the mountains are drastically decreasing (-4.3%). The average price of a second home properties is approximately 2.000 euro per sqm, even though there are some regions were the price has dropped. It is interesting that the areas that have had the highest property devaluations are those affected by the earthquake: Umbria (-4.5%) and Abruzzo and Lazio (-4.1%). Fortunately, due the specific typology of second homes the area is not yet affected by negative equity effect. The area, in fact, although is strongly featured by second home tourism, this is mainly shaped as root tourism.

In general terms, in Italy the second home phenomenon can be seen in part as the result of specific private touristic development plans and in part as the result of process of urbanization of the population during the fordist time. The latest can be seen as strongly connected to the root tourism which are properties in rural areas inter-generational transmitted or inhered. Often this phenomenon derives from the emigration of people from the most marginal areas to the wealthiest cities and areas, a process that occurred progressively from the Second World War onwards in Italy (Perri, 2013).

The so-called roots tourism, in Italy can be understood as: «the movement of people who spend leisure stays in the place in which they themselves, and/or their families, were born and where they lived before emigrating to places, which, in time, have become the ones where they now live permanently» (Perri, 2013: 56). The area of study can be presumably considered second homes derived by a root tourism, therefore the properties are not recently bought but probability inherited. In this case, the negative equity, which is the potential indebtedness when the property's value falls below the outstanding amount of the mortgage, is relatively limited considered the number of second home in the area.

In more details, the rea of study has an incredible presence of second home. According to an estimation made in Arquata del Tronto out of 1648 dwellings of housing stock market 922 can be considered second home (56% of the all stock). In Accumoli out of 1123 dwellings of housing stock market, 650 can be considered second home (58% of the all stock). Last but not least, in Amatrice out of 5257 dwellings of housing stock 76% can be considered

second homes. Within this scenario which is strongly characterised by second home and the peculiarity of the type of tourism, the devaluation value of the property reported seems not to had a massive impact in terms negative equity.

#### 2. The second home as a representation of families ties

Our study area is not new to earthquakes and in particular, in 1639, Amatrice and some surrounding areas were destroyed by a strong earthquake (Tertulliani et al., 2016). In addition, following the 24th August first shock. three other major earthquakes took place on 26th, 30th October 2016 and 18th January 2017, making these earthquakes a seismic swarm. In particular, a total of 131 municipalities were affected, with a great deal of damage, 316 dead and at least 400 injured. The impact of the earthquake was devastating. As Tertulliani et al. (2016) pointed out, real estate in the affected area belongs to traditional construction and in many cases is rural. It is located on a plateau at about 1000 meters above sea level, with an area of 174.4 square kilometers and a low population density and, as reported by ISTAT (2016), just under 2.600 residents in 2016. A peculiar characteristic of Amatrice is its almost 70 hamlets very sparsely populated and scattered over an extensive mountainous territory. Since the '20s it has suffered a slow depopulation, which has provoked a rapid aging of the villages and recent a new Renaissance of the touristic sector. Indeed, the area is composed by 69 villages and since 1991 is part of the National Park of Gran Sasso and Monti della Laga. From a morphological point of view the area is formed by mountainous and rural areas, and no important urban center exists. In terms of economic activities, a very limited part is dedicated to long lasting tradition agriculture and sheepfarming, however the more recent and emerging sector is the tourism one.

The area hit by the earthquake is composed by 131 municipalities which approximately is 1,728 square kilometers, where 25,000 people live (ISTAT, 2017). Amatrice and Accumoli in the province of Rieti and Arquata del Tronto in the province of Ascoli Piceno are the most affected places by the earthquake Pescara del Tronto, a hamlet of Arquata del Tronto, has been razed to the ground. Most of the hit municipalities have a resident population that rarely exceeds 2000 inhabitants: the most populous one is Norcia with 4,957 inhabitants. The population density is also very low. They are very small communities, often isolated hamlets, characterized by an elderly resident population.

In the three municipalities most affected, the percentage of buildings damaged varies from 16% to 20% of the total and almost all of them are

residential and most of the damage is concentrated in the historic centers, cross-checking the data of Copernicus for damage caused by the shock of August 24, 2016 with data from the 2011 census (ISTAT, 2011)<sup>5</sup>, OpenStreetMap Extracts and GeoFabrik we visualized the impact of the earthquake in our case study in Fig.1.

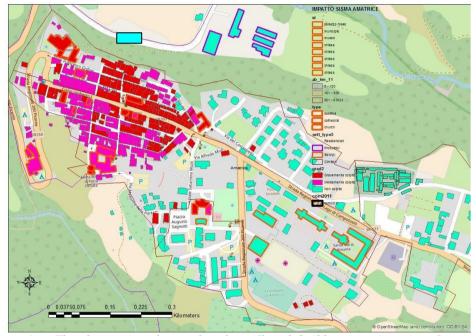


Figure 1 - The devastation the earthquake: affected buildings in Amatrice. Source: elaboration of Migliore with GIS data.

In our representation, the severely affected buildings are in red, the medium affected buildings are in fuchsia and non-affected buildings are in blue. As far as their intended use is concerned, residential buildings (i.e. the majority) have no outline; productive buildings have a lilac outline, service buildings are orange. As shown in fig. 1, the historical center of Amatrice has suffered the most serious damages: about 75% of the buildings have been hit.

<sup>&</sup>lt;sup>5</sup> It's important to highlight that there is a mismatching between the data collected by Copernicus and those of the Census. Copernicus, in fact, gathers information on building unit instead of the Census is based on individual housing units. In this research the unit of investigation is the building. In addition the results reported an estimate of the damage and is based on the data relative to a few hours after the earthquake. In fact, no further earthquakes in October 2016 and January 2017 were considered.

While some hamlets have been destroyed. The entire area is a very famous touristic destination, and tourism is an important part of the local economy. Agriculture and livestock, in fact, offer many "typical" products, also appreciated on an international scale. This has led to the expansion of the gastronomic tourism and "Amatrice" and the "pasta all' amatriciana" are one of most famous Italian recipe across the globe. In addition, the area have some naturalistic attractions, such as the thermal springs and the Gran Sasso and Laga Mountains National Park and it is rich of cultural and religious heritage. However, in this area the leading segment of the touristic sector, as it has mentioned before, is the high number of second homes and vacationers who spend the summer and the weekends in the area. According to our estimation, as mentioned above, the highest numbers of second home both in the area is in Amatrice and this data has been also confirm by the mayor of Amatrice who talks of «5.500 [are] second homes, in Amatrice and 69 hamlets». Another aspect that the research reveal is that the typology of second homes is very much connected to the root tourism, e.g.:

«Santa Giusta, I am not talking of Santa Giusta of Amatrice has always been a small reality. The only commercial activity was my uncle's restaurant, no shops. In the winter the residents were 3, 4, 5, probably in the summer we were 200-300».

A very common story telling is that in this area the second home is an intergenerational house transmission:

«yes, my father inherited the house from my grandfather... and it was passed from my grandfather's father. From one generation to another».

Although, in the collective imaginary, owners of second homes are simply defined as tourists, in their own perspective things are different: on one hand, actual residents have always considered them as an integral part of their community

For the residents:

«the real tourism, let's say, is the occasional tourism, is mainly linked to the one-day tourism, people who come, eat and go away» (an NPO member).

While the second home owners are more "locals":

«*I was born in Rome and I was also born here*» (Rome inhabitant/second home in Retrosi, Amatrice).

In other words, in this context second home tourists can define as a sort of odd inhabitant-tourist, a "temporary inhabitant". The relationship between the second home owners and the residents is quite natural, so they are not perceived as strangers to the community. The quite-intermittent presence is not considered as an extraordinary element but ordinary aspect of the community life:

«the tourism in Amatrice was mainly based on second homes, people who came back from the city to the town, either in the weekends or in every bank holiday in the year» (bar manager/Hotel in Amatrice).

From the interviews, it comes clearly out that it exists a strong bond between the history of the place, the family history and the house's memories. Some of the interviewees spend free time in the area because their parents, relatives o grandparents come from there; some others were born there and then had moved for work or study reasons to a bigger city; some others because part of the family has a property there. Several interviewees have mentioned that during the fifties and sixties the process of urbanization provoked a massive de-population of the area, and the villages had first turned into a ghost town with only few residents and then slowly to a touristic destination for families who had left. Only very recently a new type of tourism, more related to gastronomic events and short breaks, has started to become common.

Being tourist, in the words of the interviewees, can take different shapes: you can be a tripper, a holidaymaker or you have a second home because your families' roots are there. The relationship between place, individual and motivation strongly depends on what kind of tourism is experienced and what kind of impact you have on territories. The social, economic and urban impact is different, according to the type of tourism. As second home owners clearly argue,

«Obviously, I consider myself a tourist, but I came here because I am rooted to this area. The tripper exist, but they are a minority, the majority here are holidaymakers with affective ties: families or friends».

In another interviews this distinction in not related to the property but to the sense of belonging to the place. Beyond the mere housing tenure, it seems clear that Amatrice, as well as other villages in the area, has not been the outcome of a touristic destination development, but the research of the family's roots which has turned the area into a touristic destination. Their history and past are very relevant in the creation of the second life of those villages.

*«here the second home tourism does not really exist, like when you buy a house on the beach"* 

In the majority of cases,

«those properties are like families' memories»

It is undebatable the added value of this specific typology of tourism and the important role played by the local community. Indeed, Long-lasting residents and home holiday makers are nourishing each other and keeping those villages alive. In opposition to other tourist destinations in which there is an open conflict between tourists and residents, in this area the different social groups had developed before the earthquake a mixed social capital which has improved the quality of life of this area and has created an important bond.

«The holidaymakers are the hard core of this area. Imagine that at the begging of last century, the trippers coming here were shocked by the fact that almost all were speaking in roman [instead of the dialect of Amatrice]. In winter the area was guarded by locals, from May to October, during school holidays, the area was guarded by holidaymakers (...)».

Throughout the decades, the tourism in Amatrice has changed alleging to new mode of experiencing leisure time. According to the interviews, in the sixties and seventies, in summer, holidaymakers populated Amatrice for a rather long period. Some interviewees remembered, indeed that as soon as the schools ended, the families, especially mothers with kids, moved to summer holiday houses until September. Social and economic changes, such as women's access to the labor force, changes in the education system and economic constrains, have reduced the "one long holiday" model. Then, Amatrice and its surroundings have increasingly turned into a weekend escape especially for those home holidaymakers living in the nearby urban areas, such as Rome, Chieti, Naples. However, the persisting temporary and

constant use of second home, have maintained and in some cases reinforced the relationship between locals and second home owners, who are often not perceived as strangers but part of the local community. On the contrary, the contribution and active participation of second home owners to the social and cultural life of most of those villages is very significant. In specific, during the interviews several examples of this cohesive community have been mentioned, such as the creation of a *PROLOCO* (which is a touristic entity in charge to promote and foster social and cultural activities for the town), or the promotion of projects to develop a better use of public spaces, etc.

In such a cohesive community, it is very interesting to explore how social dynamics have been affected during the different phases of the disaster. In other words, the following sections analyses whether the second home owners, who by the literature are classified as tourists, have behaved during the emergency phase or the recovery phase.

## 3. Managing the emergency in a touristic destination: strengths and weakness of a root tourist destination

On August 24<sup>th</sup>, the center of Amatrice and the surrounding districts were hit in various ways by the first shake, the impact was devastating and the majority of buildings collapsed. Immediately, the state of emergency was declared and the institutional engine was activated. Although was summer, the holiday period was almost over and therefore only few of the respondents were in town. However, almost all the interviewees recorded vividly where and what they were doing when they got the news. For them, although they did not directly experience the earthquake, their storytelling represents a traumatic moment:

«it was a miracle, because I had to go to Amatrice but the actor Daniele Pecci phoned me (...) and then I replied "I'll see you tomorrow morning for the scene, I'm not going up to Amatrice anymore. Here, I no longer went to Amatrice for this. Not only when we set up the scene of Hamlet, I entered the scene with a coffin and entered this coffin and pulled out skulls, the skull that is then given to Hamlet ... I don't know if a thing of destiny, a particular thing» (Amatrice's inhabitant).

The sense of belonging of all holidaymakers is so strong that most of them perceived themselves as victims, even though they were far away from Amatrice. Alternatively, according to the literature, one of the aspect to take

under control in the rescue phase is the evacuation management strategy. In the case of Amatrice, most of the interviewees told us that the first intention (and action) was to go to their house and friends to help. It was "a call to the roots" and several of them immediately decided to go to Amatrice to help the survives and the local community:

«We were going there, on the way they called my husband back on duty, because the colleague didn't feel well, so by chance we were not there. But we had almost all the relatives there who were waiting for us and we ran to go» (Amatrice's inhabitant).

Another key aspect in the emergency phase is to house the displaced people who have lost everything because of the disaster. In this specific case, the problem was not quantitative but qualitative. The very peculiar social and economic context of the area played a very important role in the organization of the support. Considered the affected area and the degree of devastation, the number of re-settlements were relatively limited. The high percentage of second homes and the relatively low season period became immediately a straight, rather than a weakness. The real problem was to understand who were the people in needs and activate the rescue procedures. The local community, and Amatrice is a clear example, in that precise moment was mostly composed by the residents' majority of elderly people, and in contrast to the expectations, the rescue procedures need to focus on residents rather than tourists.

In some cases the emergency of was handled by hosting some of the victims in hotels on the Adriatic coast, in other case the solution was to offer financial contribution, in other the CAS<sup>7</sup> were provided, a very limited resources were devoted to the tourists. Thus, even if Amatrice is a very famous touristic destination, in practice the rescue procedure had followed the normal path.

#### 3.1. Time-lapse for the reconstruction phase

The reconstruction phase was designed by controlling the static conditions of the buildings giving priority to those which were less damaged, in order to allow the return back of those who reported a minor damage, and to provide temporary accommodation to displaced people in specific emergency housing solutions (SAE, *Soluzioni Abitative Emergenziali*) i.e: little re-mountable houses, already furnished and earthquake-proof. However, due to a delay in

providing this solution, many small hamlets are still today deserted and those few people, who have decided to stay, created self-made housing solutions such as containers, caravans, waiting for the SAE. As a girl states:

«Now there's nobody left in the town, the houses are still in place, but only two are usable. And are those belonging to whom use to always live here" (Amatrice's inhabitant).

The case of Amatrice, unfortunately is following the tragic path of most of the reconstruction phases in Italy: doubts and perplexities for the future emerged, the perception of lack of information and clarity, and being forgotten by the institutions, as reported by the interviewees.

However, what makes this disaster different from the others is that the government has specifically designed the reconstruction policies by taking into consideration the specific features of the area and a specific attention is given to second-home properties. The reconstruction policy specifically mentions that the financial incentives for the reconstruction are targeted to all buildings located in the "seismic crater" (100% reimburse), namely precisely the possible faction of the property "first houses, productivity activities and holiday houses". In case the damaged properties, no matter if they are main residences or second homes, are located near to the affected area, the contribution is 100% "for principal homes and productivity activities", in case the properties, are situated outside the affected area 50% of the contribution was given for restoring/rebuilding second homes.

The relevance of this reconstruction policy oriented also to second homes highlights the acknowledge that second homes has had on the economic and social development of Amatrice's territory. Several interviews underlined that the local economy was mostly based on the presence of touristic second homes, and local social life was also helped by the tourists. Associations, institutional stakeholders and local groups stressed that local promotions of the cultural life of the area had a high presence of second home owners in the organization.

«More than correct, it is necessary because one can't talk about the reconstruction of a place if does not talk also of reconstruction of the social texture and this tissue was done in this way and they realized it in no time» (coordinator Proloco).

A coral opinion, both by side residents and second home owners, is that the future of this area cannot be possible without the opportunity to attract the tourists back to the area again.

«The majority of houses are second homes, making a different choice had the same meaning of leaving this town. More than what is my personal interest, but also thinking about the wellness of this town, in my opinion it was the best choice» (second-home inhabitant in Roma/Sommati).

As it has been also confirmed by Amatrice major, Sergio Pirozzi, who was in charge since then, and endorsed this policy.

«If there had not been this, we would have closed the doors...if there had not been the 100% (...). It was clear right away that it wasn't a request for an assault to the couch, but it was drawn on the awareness of the economic fabric of the territory» (second-home inhabitant in Preta/Roma).

The open question, however, is not what to re-build and where but when this will happen. The process of reconstruction, as we know, is very slow in Italy. The problem emerges when the time for re-building is different for the two groups: first local inhabitants should be housed by re-building or fixing the properties, and then, the others will follow.

«(...)we know that those territories are mainly made of second homes. Local current residents of those municipalities are very few, while, in August, residents are multiplied by ten. The majority of the houses in those territories are second homes. Not financing the second homes has the same value of not giving housing capability back to those territories» (an NPO).

This policy of funding management seems to show a contradiction: although the two categories are considered completely equal in terms of financial contribution, the reconstruction timings are different. A territory needs people and economy to work.

«(...) we know that those territories are mainly made of second homes. Local actual residents of those municipalities are very few while, in August, residents are multiplied by ten. The majority of the houses in those territories are second homes. Not financing the second homes has the same value of not giving housing capability back to those territories» (an NPO).

Further, the plan of economic contributions established for reconstruction/fixing the same timing, even if the damage are different and some second homes can be occupied again with a very small investment as Castel Trione homeowners tells:

«The municipality has a shortsighted and wrong attitude (...) because they preclude the possibility to come back to those who have the home B... They did not make an investigation on every district to see which are collapsed, to be tore down, to be rebuilt, those that are usable, those that, with little intervention, come back usable again. You have to allow a flow of people which comes back and lifts the economy up again» (Roma/Castel Trione).

However, in general, there is the fear that the reconstruction could be delayed for everybody: above all, the elder residents suffer with resignation from the fact that they will never see their own home re-built:

«I don't believe it, not even for first homes... I think I will die in there. I requested it twice, I was not chosen, so what» (coordinator Proloco).

And a community which is based on an elderly population and temporary residents the time might be a very risk factor for the future of the area. It might be that this area will lose again the change to turn to be alive.

# 4. Conclusion: short term strategy to keep the area attractive. Will it be enough?

The touristic sector in Amatrice was massively affected by the earthquakes. And the situation got even worsen also due to the 2016/2017 winter weather (abundant snowfalls in January 2017) and the Rigopiano tragedy. According to Bartolini and Pillo (2017), before the earthquake, in the affected area the tourism sector was estimated around 9Bn Eur yearly, with 5.2m arrivals, 20m days of tourism presence, 25k involved companies attracting 600m of expenses from foreign tourists only. The economic impact was devastated: the hit areas registered a drop of 90% in arrivals, while others, not directly involved, had from 30% to 50% drop between November to December 2016. Apart from the disaster, also media had created a negative imagine by sensationalizing the tragedy, and stigmatizing not only the hit area but also the surrounds. In general, in order to make tourists to come back to the affected areas, the government started touristic promotion campaigns with

the aim of supporting the local economy and buzzing again the tourism industry.

In the case of Amatrice, the campaign was mostly oriented to food tourism by promoting a food district- Area del gusto, della tradizione e della solidarietà- a network of local restaurants. The "Amate Amatrice", designed by Stefano Boeri was financed through a fund-raising strategy and tried to create events and activities related to the local food industry of the area. In general, it can be argued that in the short term tourism initiatives might help to re-locate the area into a tourist destination, and re-brand it. In the case of Amatrice, the initiatives linked to food and wine tourism and to the surrounding mountains, will probably have an important impact in the short term, but they won't create a new imagine of the area, yet. However, the open question is now: how this re-branding strategy will be combined with the main drivers of the tourism industry in the second homes area? Timing seems to be the main challenge of the reconstruction phase. What the research has highlighted is that short after the shock second home owners are still very attached to the place and they are willing to come back to the area. However, there are still many unresolved questions.

The short-term strategy promoting social events and performances was oriented to attract the tripper and the short break tourist, but it is not clear if it is connected to the more long-lasting strategy, which is the second-home coming back strategy. At the moment, this seems not completely achieved.

Although the reconstruction policy, for the first time, have acknowledged the role of second home owners in the recovery and reconstruction process, the risk is that the reconstruction will come too late. The interviewees have insisted on their place attachment, but the question is for how long will their ties to Amatrice resist? The risk of losing interest in the area or in re-building houses is very high. Personal decisions and economic constrains - such as the devaluation of properties, for example - might lead to new tourist destinations. While the short policies for the tourists are more related to the soft initiatives - festival, events, food branding etc-, the longer one are related to the structure of the villages - re-building the houses. At the moment, it seems that first there is an unbalance between the short and the long reconstruction strategy, and second that the two strategies are targeting two different typologies of tourism. Although the policy towards second home owners is very innovative, the implementation following the traditional steps might be very ineffective and it might not lead to the construction of the strong and lively local community that existed before the earthquake.

#### References

Armondi, S., 2011, "Trasformazioni della mobilità residenziale turistica. Dalle 'seconde case' alle nuove pratiche di uso e abbandono del territorio", *Territorio*, 3(58), Franco Angeli, pp. 148-154

Cohen, E., Cohen, S.A., 2012, "Current sociological theories and issues in tourism", *Ann Tour Res* 39 (4):2177-2202.

Faulkner, B., 2001, "Towards a framework for tourism disaster management", *Tourism Management*, 22, pp. 135-147.

Ferrero, G., 1998, "Seconde case, politiche urbanistiche e turismo nelle Alpi occidentali italiane", *Revue de géographie alpine*, 86 (3):61-68.

Hall, C.M. (2014) Second home tourism: an International Review, In *Tourism Review International*, 18: 115-135.

Hall C. M., Müller, D., 2004, *Tourism, mobility and second homes:* Between elite landscape and common ground, Clevedon: Channel View.

ISTAT, 2011, Censimento generale della popolazione, Roma.

ISTAT, 2016, Caratteristiche dei territori colpiti dal sisma del 24 agosto 2016, 15 settembre 2016.

ISTAT, 2017, *Movimento turistico in Italia, anno 2016*, Statistiche Report, 30 ottobre 2017.

Kaltenborn, B. & Bjerke, T., 2002, "Associations between environmental value orientations and landscape preferences", *Landscape and Urban Planning*, Vol. 59, Issue 1, 1 March 2002, 1-11.

Mugnano, S. & Carnelli, F., 2016, A "New Normality" for Residents and Tourists: How Can a Disaster Become a Tourist Resource?. In: Bellini N., Pasquinelli C. (eds.), *Tourism in the City. Towards an Integrative Agenda on Urban Tourism*, London: Springer, 321-332.

Perri, A., 2013, "Residential Roots Tourism in Italy". In: Roca Z. (ed.) Second Home Tourism in Europe. Lifestyles issues and policy responses. Surrey: Ashgate.

Rey-Valette, H., Rulleau, B., Hellequin, A.P., Meur-Férec, C., Flanquart, H., 2015, "Second-home owners and sea-level rise: the case of the Languedoc-Roussillon region (France)", *Journal of Policy Research in Tourism, Leisure and Events*, 7(1): 32-47.

Roca, Z., 2013, Second Home Tourism in Europe. Lifestyles issues and policy responses. Ashgate: Surrey.

Skak, M., 2004, "Restricting Ownership of Vacation Homes", *Tourism Economics*, 10(4), 435-447.

Tertulliani, A. et al., 2016, Il terremoto di Amatrice del 24 agosto 2016: effetti nell'area epicentrale e valutazione dell'intensità macrosismica

attraverso la scala EMS, Istituto Nazionale di Geofisica e Vulcanologia, GNGTS 2016, Sessione Amatrice, 78-82.

Williams, A.M. & Hall, C.M., 2000, "Tourism and migration: New relationships between production and consumption", *Tourism Geographies*, 2:1, 5-27.

#### Websites

http://www.copernicus.eu/main/emergency-management.

Increasingly, socio-natural risks and disasters represent the result of an unsustainable interaction between human beings and environment. The current scientific debate has generally agreed on the idea that the impact of natural hazards needs to take into account the social vulnerabilities and exposures to risk of the affected population. The most recent earthquakes have unequivocally shown the complexity of the phenomena and their multi-scale dynamics. Indeed, the territory is the combination of natural, social and cultural environment and only by exploring its anatomy and physiology, it will be possible to manage and protect it in the best way.

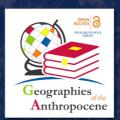
This volume collects a quite wider range of national and international case studies, which investigate how socio-natural risks are perceived and communicated and which strategies the different communities are implementing to mitigate the seismic risk. This publication has been possible thanks to a fruitful discussion that some scholars had at the 36th General Assembly of the European Seismological Commission held in Malta from 2 to 7 September 2018.

**Piero Farabollini**, Ph.D. in Geomorphology (University of Perugia, Italy). He is Associate Professor of Geomorphology and Physical Geography at the University of Camerino (Italy), Earth Sciences Department and Coordinator of geological and geothematic field mapping and hydrogeological risk assessment projects. Previously he was coordinator of the Communication group of the National Council of Geologists and subsequently President of the Marche Association of Geologists. Currently he is Extraordinary Commissioner for Reconstruction after the Earthquake in Central Italy.

Francesca Romana Lugeri, geologist, sociologist, geographer (Sapienza University, Rome, Italy); Ph.D. in Environmental Sciences and Public Health (University of Camerino, Italy), she is researcher at ISPRA Institute for Environmental Protection and Research. Since 2016 she is Research Associate at the University of Camerino. Topics of current research projects are: unconventional scientific communication, dissemination, education; science popularization for risk consciousness and prevention; landscape analysis, geological and geothematic mapping, GIS developing.

**Silvia Mugnano** is Associate Professor of Urban Sociology and her research interests include housing, urban transformation, and socio-natural disaster studies. She is teaching nationally and internationally on tourism and local development, and she is intensively working on promoting the topic of socio-natural disasters in the sociological debate. Her recent publications on the topic include Territori Vulnerabili (FrancoAngeli, Milan, 2017) and a Special Issue on "Socio-Natural Disaster, resilience and vulnerability: the territorial perspective in Italian current debate" in Sociologia Urbana e Rurale (2016) and several articles among which "A New Normality for Residents and Tourists: How Can a Disaster Become a Tourist Resource?" (Springer, 2016).





ISBN 978-88-943275-6-4