IJPP

ISSN: 2239-267X

Post-earthquake recovery in peripheral areas: the paradox of small municipalities' reconstruction process in Abruzzo (Italy)

Grazia Di Giovanni

Ph.D. Researcher, Gran Sasso Science Institute
Viale Francesco Crispi 7 – 67100 L'Aquila (Italy)
grazia.digiovanni@gssi.infn.it

KEYWORDS: Post-earthquake reconstruction, Inner Areas, Reconstruction Plans, Inter-municipal cooperation, L'Aquila.

ABSTRACT

In 2009, Abruzzo Region was hit by a severe earthquake which damaged the city of L'Aquila and other 56 minor municipalities already affected by trends of demographic and economic decline at the time of the disaster. This contribution focuses on the mid-term reconstruction of this "Seismic Crater" interpreted as a peculiar case in the scenario of Italian "inner areas". The "National Strategy for Inner Areas" (SNAI) was launched by Italian Government in 2014 with the purpose of enhancing local development in peripheral fragile municipalities, distant from major service hubs. A large majority of the Crater is included in the list of inner areas. Special post-earthquake legislation and SNAI share multiple goals,

especially related to supporting local revitalization. L'Aquila's territory represents an "anomaly" in the milieu of inner areas: *the disaster worsened pre-existing conditions of marginalisation, but post-earthquake reconstruction and related funds offered uncommon resources to shape transformative patterns of development, cooperation and innovation.*
Using a descriptive approach and focusing on purposes and contents of the Reconstruction Plans, the study questions the ongoing reconstruction process as an occasion to foster long-term socio-economic recovery, urban renewal, and innovative inter-municipal governance besides the rebuilding of urban fabrics in the light of SNAI.

INTRODUCTION

The morphology of Italian territory portrays two peculiarities of the country: examining its spatial-functional organisation, it is a highly scattered system of towns and villages around a few major cities; analysing its physical attributes, it is highly vulnerable to several nature-related hazards (earthquakes, landslides, river floods). The Italian pattern of settlement can be described as a polycentric structure, based on medium-large cities (mainly located along coastal areas and in the northern wide flatlands) which host the majority of the population and act as hubs for primary services. Widespread networks of minor towns, villages and rural areas (mainly located in hilly or mountainous zones) gravitate around these "urban" systems and are defined as "Inner Areas" (Barca, Casavola, & Lucatelli, 2014, p. 14). Inner Areas are characterised by large unused territorial capital, high social costs and limited citizenship (*ivi*, pp. 15-16). After two years of studies, in 2014 the Italian Government launched a specific long-term policy for the redevelopment of these areas, titled "National Strategy for Inner Areas" (SNAI). As mentioned previously, nature-related risks affect the entire country. Italy is highly earthquake-prone because of its position in the area of convergence between African and Eurasian tectonic plates, and its complex orography amplifies hydrogeological instability (ANCE & CRESME, 2012; Trigila, Iadanza, Bussettini, Lastoria, & Barbano, 2015). The official SNAI database (Agenzia per la Coesione Territoriale, 2014b) includes information related to seismic and landslide risks; extrapolating only municipalities classified as inner areas (≈ 4.200 municipalities), about 900 cases present the highest seismic risk for human lives, and about 330 count at least 500 inhabitants exposed to landslides. Indeed, Italian history enumerates many nature-related disasters: an analysis limited only to seismic activity in XX and XXI century highlights about forty disruptive

earthquakes which involved little towns and rural areas principally, but without sparing larger urban systems (Boschi, Guidoboni, Ferrari, Valensise, & Gasperini, 1997; Rovida, Locati, Camassi, Lolli, & Gasperini, 2016). The most recent ruinous seismic sequence started on 24 August 2016 in Central Italy, devastating the small town of Amatrice and its surroundings, killing 298 people.

This study is focused on mid-term reconstruction in Abruzzo, a region in Central-Southern Italy struck by a catastrophic earthquake in April 2009, which heavily damaged its capital city L'Aquila and a vast neighbouring territory causing 309 deaths. This large distressed area is labelled "Seismic Crater" and 77% of its municipalities are "inner areas" according to SNAI categorization. The Seismic Crater is here interpreted as a peculiar case in the general scenario of Italian inner areas, questioning the experience of this reconstruction as a chance to promote socio-economic revitalization beyond mere rebuilding, in the light of SNAI. Vice versa, the experience of the Crater is seen as a potential testing ground for a reflexion about non-ordinary long-term development strategies. A great part of principal earthquakes occurred since 1900 were grave disasters, but diverse for: impact of the event on human lives and activities, size and typology of damaged settlements, the economic base of the areas involved in the disaster, socio-political context, etc. (Guidoboni & Valensise, 2011). Indeed, in the cases of the most ruinous ones befallen in last fifty years, national and local authorities faced post-disaster reconstruction following deeply dissimilar approaches in terms of technical, socio-economic, legislative and administrative aspects. A national-led vision of the reconstruction and centralised forms of management and control were preferred in situations like Belice's (1968, western Sicily, south Italy) and Irpinia's earthquakes (1980, central Campania, south Italy). On the contrary, entrusting local institutions of the principal leadership was the pillar of the reconstruction strategy in Friuli (1976, north Italy), as well as in

Umbria and Marche (1997, central Italy) (Mazzoleni & Sepe, 2005; Nimis, 2009). Abruzzo's reconstruction is a complex and long process, still ongoing, guided by both the national government, both by local institutions and technical offices. A significant role of national boards in the emergency phase (2009-2012) was progressively replaced by a growing centrality of local institutions, in particular since the return to ordinary administration in late 2012, promoting cooperation between central, regional and local authorities. Since the beginning the reconstruction process was led by special legislative frameworks to achieve short-term and long-term goals and a re-organisation of functions and administrative structures. To coordinate multiple initiatives was particularly needed for the reconstruction of the Crater's minor municipalities[1], through fostering inter-municipal coordination among L'Aquila and the surrounding settlements. Many similarities can be recognised between aims and measures of SNAI and those of Abruzzo's special post-disaster framework. The research looks at the ongoing reconstruction of the Crater which arises as a paradoxical network of inner areas, between pre-existing disadvantages amplified by the disaster and the unusual economic and technical resources offered by the recovery process to support new forms of local-based social and economic development.

A STRATEGY FOR INNER AREAS

A national proposal

The "National Strategy for Inner Areas" (SNAI) was officially

[1] *Expressions like "minor municipalities of the Crater" or similar exclude L'Aquila city.*

launched by Italian Government in 2014 [2] to "contribute to the country's economic and social recovery, creating jobs, fostering social inclusion and cutting the costs of regional depopulation" (Barca et al., 2014, p. 7). SNAI is grounded on the peculiar polycentrism of Italian territory: entire Italy is characterised by networked minor settlements and rural areas gravitating around major urban areas which offer diversified public services. This long-term national strategy focuses on "non-urban" areas, characterised by inadequate access to collective services, and consequently recognised as marginalised and disadvantaged. Indeed, criteria to identify inner areas are mainly based on the distance of each Italian municipality from a so-called "Essential Service Provision Centre", a definition that indicates a municipality [3] able to provide full secondary education, one emergency care hospital and a medium-small railway station. All the remaining municipalities are classified into 4 categories (from "outlying areas" to "ultra-peripheral areas") according to the time necessary to reach the nearest service hub, as indicated in Figure 1. Inner Areas demand a travel time by car of at least 20 minutes to the nearest service provision centre. SNAI describes inner areas as stressed by demographic decline, scarcity of job opportunities, inadequate local provision of public and private services, hydrogeological instability, deterioration of the cultural and landscape heritage. Nevertheless the constant marginalisation that

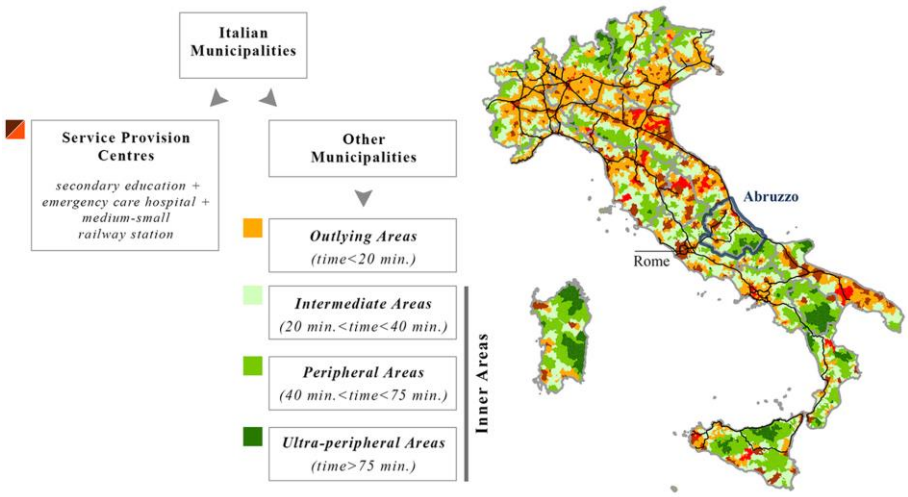
---

[2] *SNAI's first steps date back to the autumn 2012. The strategy is operative from 2014, as stated by the Legge di Stabilità 147/2013 ("Stability Law"), by the Documento di Economia e Finanza - Programma Nazionale di Riforma 2014 approved on 8 April 2014 ("Economic and Financial Document - National Program of Reform") and by the Accordo di Partenariato 2014-2020 ("Partnership Agreement") adopted by the European Commission on 29 October 2014. All policy documents are available at http://www.agenziacoesione.gov.it/it/arint/.*

[3] *Also groups of neighbouring municipalities can constitute "essential service provision centres".*

affects these territories since the end of World War II, around one-quarter of Italy's population lives in inner areas, which cover 60% of the total national territory (*ivi*, p. 25). Assuming that "citizenship constituents" within a territory are based on adequate access to essential services, such as upgrading education, health, collective mobility and internet access, inner areas do not offer an equal quality of citizenship to their inhabitants (*ivi*, pp. 10, 15, 19, 22).

Figure 1 – Classification of Italian Municipalities in "Inner Areas", "Outlying Areas" and "Service Hubs" according to SNAI



Source: Author' elaboration from Barca et al. (2014).

The general goal of SNAI is to improve the quality of life of inner areas' inhabitants and improve demographic trends, by fostering new forms of development, enhancing social inclusion, increasing job opportunities. The implementation of the Strategy is based on gradual phases, starting from one selected pilot area for each Region, committed to designing its own local strategy in line with the national goals. Two interrelated goals are expected by pilot strategies: to promote local development, and to ensure an adequate public

provision of essential services. The strategy will be extended according to the results of these first experimental phases.
SNAI promotes overlaps and intersections of national and local perspectives for drawing up social and economic development strategies, to avoid both the "illusion of a local project" both the "unreality of a national project" (*ivi*, p. 18). Although single municipalities are recognised as base units for every policy-making process, the high incidence of small-sized municipalities in inner areas suggested to pursue forms of aggregations of municipalities to restructure collective services effectively and to envision long-term socio-economic scenarios. Consequently, inter-municipal associations or official collaborations are an essential prerequisite for being involved in SNAI.
Between July 2014 and May 2016 every Region selected one association of municipalities as "pilot area"[4]: pilot areas are required to define a local-based strategy that, starting from the current conditions of the territory, should define common goals (to inverse damaging trends and to improve citizens' quality of life) and sketch local development strategies (identifying actions and budget plans, involving stakeholders and local communities).

Inner Areas in Abruzzo

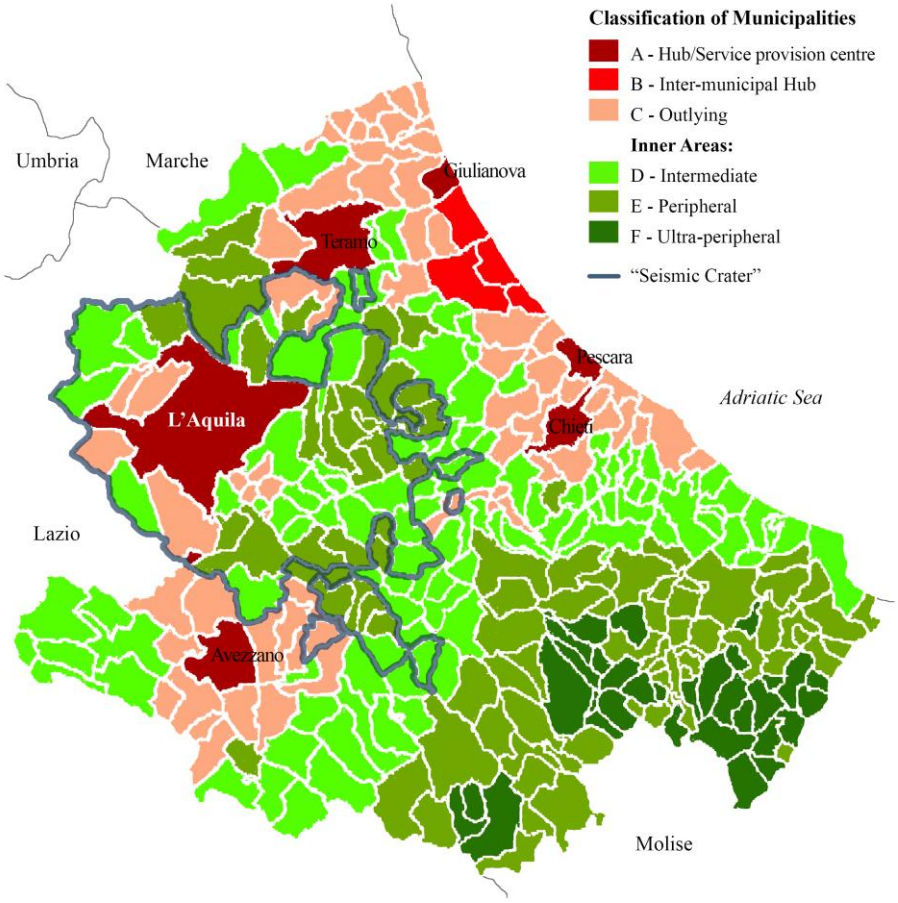
Nevertheless located in Central Italy, the Abruzzo Region is considered part of "South Italy macro-region" from a social and economic point of view, an indicator of under-performance per se (OECD, 2013). It is indeed one of the least populated Italian regions: about 1.326.000 inhabitants in 2016, 2,2% of the national population (Istat, 2016). Inner areas characterise the overall regional structure:

[4] *Lombardia Region is the only exception, with two pilot areas.*

75% of Abruzzo's municipalities are so classified (38% intermediate, 27% peripheral, 10% ultra-peripheral areas), hosting 37% of Abruzzo's inhabitants. This population is progressively shrinking and ageing: 23,4% is older than 65 years old, and only 14% younger than 16 years old in 2011 (the Italian averages for inner areas are 15,7% for young population and 21,2% for aged population) (Agenzia per la Coesione Territoriale, 2014c)[5]. As shown in Figure 2, inner areas are mainly located in southern Abruzzo at the borders with Molise, constituting a large territory which includes the regional pilot area "Basso Sangro-Trigno". A wide group of inner areas is also present in central Abruzzo, surrounded by the principal service hubs of the Region and correspondingly for a large part with the Seismic Crater introduced previously. Data summarised in Table 1Table *1* highlight the evident weight of inner areas in Abruzzo and in the Crater, even clearer when compared to national percentages. The Crater includes L'Aquila and other 56 neighbouring municipalities, whereof 44 are labelled as inner areas: 19 are "intermediate areas" with around 30.800 inhabitants, 25 are "peripheral areas" hosting 12.500 inhabitants.

[5] *Full data are provided by Abruzzo Regional Dossiers and indicators on inner areas, available at:*
http://www.agenziacoesione.gov.it/it/arint/Eventi/Regione_Abruzzo/index.html
http://www.agenziacoesione.gov.it/it/arint/OpenAreeInterne/index.html

Figure 2 – Inner Areas in Abruzzo Region, with indication of the Seismic Crater



Source: Author' elaboration from Comitato Nazionale Aree Interne (2015, p. 33)

Table 1 - Distribution of municipalities, population and surfaces among Inner Areas and Service Hubs in Abruzzo Region, Seismic Crater and Italy

	Municipalities (no.)		**Population (inhabitants)**		**Surface (sq. km.)**	
	Service Hubs	**Inner Areas**	**Service Hubs**	**Inner Areas**	**Service Hubs**	**Inner Areas**
Abruzzo	305		≈ 1.307.000		≈ 10.830	
	75 (25%)	230 (75%)	≈ 823.000 (63%)	≈ 484.000 (37%)	≈ 3.150 (29%)	≈ 7.680 (71%)
Crater	57		≈ 137.600		≈ 2.400	
	13 (23%)	44 (77%)	≈ 94.300 (69%)	≈ 43.300 (31%)	≈ 860 (36%)	≈ 1.540 (64%)
Italy	8092		≈ 59.434.000		≈ 303.000	
	3907 (48%)	4185 (52%)	≈ 46.105.000 (78%)	≈ 13.329.000 (22%)	≈ 121.500 (40%)	≈ 181.500 (60%)

Source: Author' elaboration from S.N.A.I. Open Data (Agenzia per la Coesione Territoriale, 2014a)[6]

THE RECONSTRUCTION AFTER 2009 EARTHQUAKE

The Seismic Crater

Italy is highly vulnerable to nature-related hazards. Data referred to only seismic activity since the beginning of XX century indicate more than seventy earthquakes with a magnitude of 5.5 Mw or higher, whereof about forty with an intensity value of VIII level or above on Mercalli scale (Boschi et al., 1997, pp. 120-122; Rovida et al., 2016). As introduced previously, on 6 April 2009 one of the most ruinous earthquakes of Italian history struck Abruzzo Region (6.3 Mw),

[6] *Data about population refer to ISTAT Census 2011.*

heavily damaging its capital city L'Aquila (main service hub of western Abruzzo) and a large surrounding territory. "Seismic Crater" is the definition used to indicate 57 municipalities that registered a quake with an intensity value equal or higher than VI level of Mercalli intensity scale (therefore considerably damaged). The Crater is a large territory (about 2.400 square kilometres) with more than 130.000 inhabitants but it. is composed of numerous scattered settlements and villages, tiny in size and population: out of 57, only 10 municipalities have more than 2.000 inhabitants (L'Aquila included), mainly aged. A demographic decline in these areas started from the beginning of the last century and increased after the Second World War. Because of the large extension of the affected area, its internal fragmentation and the huge losses, the reconstruction appeared immediately as a highly complex process to lead, and special legislative and institutional frameworks were introduced to speed up the recovery process. To merge the physical recovery of the built environment with long-term territorial development was indicated as the overall goal to achieve and clearly stated by the National Law no. 77/2009 and by the Decree of the Commissioner for Reconstruction no.3/2010, the legislative pillars of the reconstruction. According to Law no. 77, the Crater's municipalities (in agreement with the Region's and Province's Presidents) are asked to define strategic guidelines for municipal (re)planning to foster socio-economic recovery and urban redevelopment, ensuring a harmonious reconstruction of urban fabrics (Art. 2, 12-bis). Decree no.3 widens and reinforces the general aims of the reconstruction process, calling for coordination of multiple initiatives to envision inter-municipal large scale scenarios and to reinforce mutual relations among

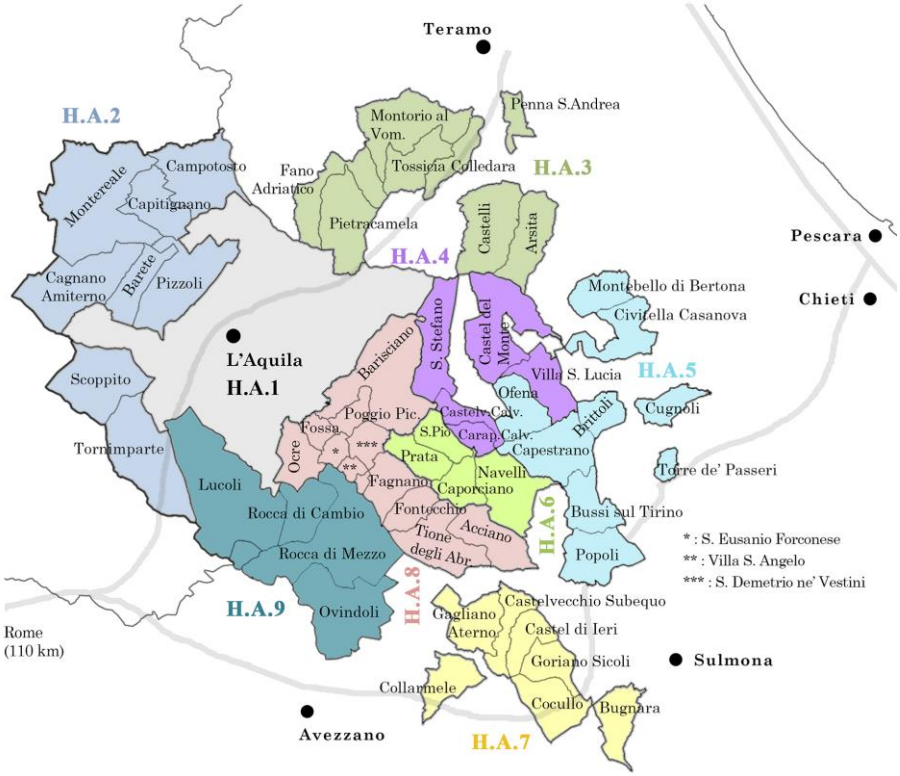
L'Aquila and the neighbouring settlements. General criteria for the reconstruction aim at (Art. 1, 2)[7]:

a. the reinforcement of local systems by identifying "Homogeneous Areas" (HAs) for strategic sectors of intervention;
b. the restoration of natural and historical networks;
c. the improvement of regional and local mobility networks;
d. diffusion, capillarity and efficiency of infrastructures and services.

Consequently, inter-municipal coordination is recognised as a necessary step to manage multiple initiatives and to meet such integrated and ambitious long-term goals. Excluding L'Aquila, all the municipalities of the Crater have been aggregated in eight HAs through volunteer agreements among mayors, with a "leading municipality" for each HA and a common Coordinator for all of them[8] (see Figure 3). HAs have been planned as optimal entities to address the reconstruction, even if with no hierarchical prevalent normative role on single municipalities.

[7] *The same goals have been reconfirmed by Law no. 134/2012, Art. 67-quater.*
[8] *L'Aquila municipality corresponds to HA 1 with its own Coordinator.*

Figure 3 – Organization of the Seismic Crater in Homogenous Areas



Source: Author' elaboration

A "Mission Structure" (directly dependent on the central national government) had the role to control the use of public funds and to coordinate HAs bridging local and national levels during the "emergency phase" (phase opened the day of the earthquake and closed in August 2012). An innovative governance model was gradually built and based on the collaboration among central control structures and local authorities: the growing relevance of local institutions emerged more clearly with the return to "ordinary administration" by September 2012 and with the addition of two "Special Technical Offices" with the role of coordination and support

(U.S.R.A. located in L'Aquila and dedicated to the city, and U.S.R.C. located in Fossa and dedicated to all other HAs).

The Reconstruction Plans

Law no. 77 (Art. 14, 5-bis) and Decree no. 3 (Art. 5, 1) define the "Reconstruction Plans" as extra-ordinary planning instruments to rule the reconstruction process in core areas of the Crater's towns, confirming for the Plans the same objectives already affirmed as overall goals of this reconstruction:

1. to ensure social and economic recovery;
2. to promote urban redevelopment;
3. to facilitate inhabitants in returning home.

The Plans act within specific "perimeters" *("perimetrazioni",* Decree no.3, art. 1) defined after the earthquake with the aim of identifying parts of the towns with peculiar historical and landscape values, and largely damaged. In many cases, the perimeters overlap with the historical centres as defined by pre-existing town planning. The purpose of establishing these perimeters was to ensure a coherent and unitary planning for valuable portions of the settlements; outside these perimeters, the reconstruction has followed specific regulations without requiring extensive plans. Nevertheless the aggregation in HAs, every municipality could commission the design of its Reconstruction Plan autonomously (Di Giovanni & Chelleri, Forthcoming). The time needed to assign, design and approve the Plans varied deeply: the first plans for eleven municipalities were approved in 2012; at the moment of writing eight Reconstruction Plans are not yet approved.Table *2* summarises principal data about the Crater's municipalities, identifying inner areas, status of implementation of the Plans, demographic data.

Table 2 - The Seismic Crater

HA	Municipality	Inner Area	Reconstr. Plans: Implementation and Designers	Inhabit. 1991 Census	Inhabit. 2011 Census	Ageing Index (2011)
1	L'Aquila	No	Approved	66.813	66.964	170
2	Barete *	No	Approved - F	635	679	286
	Cagnano Amit.	Yes - I	In progress - F	1.685	1.383	332
	Campotosto (◊)	Yes - P	Approved - F	865	586	487
	Capitignano (◊)	Yes - I	Approved - / /	216	680	360
	Montereale (◊)	Yes - I	Approved - F	3.114	2.812	270
	Pizzoli	No	Approved - F	2.598	3.773	110
	Scoppito	No	Approved - F	2.251	3.285	110
	Tornimparte	Yes - I	In progress - / /	3.016	3.096	201
3	Arsita	Yes - P	Approved - R: *ENEA et al.*	1.061	871	309
	Castelli	Yes - I	In progress - R: *Univ. Chieti-Pesc.*	1.600	1.224	327
	Colledara	No	In progress - F	2.155	2.237	188
	Fano Adriano	Yes - I	In progress - F	432	354	557
	Montorio al Vomano * (◊)	No	In progress - R: *ENEA et al.*	8.918	8.201	165
	Penna Sant'Andrea	Yes - I	Approved - R: *Univ. Camerino*	1.673	1.728	179
	Pietracamela	Yes - P	In progress - F	350	304	494
	Tossicia	Yes - P	In progress - F	1.456	1.418	213
4	Carapelle Calvisio (×)	Yes - I	Approved - F	125	85	300
	Castelvecchio Calvisio (×)	Yes - I	Approved - R: *Univ. Padova et al.*	246	159	300
	Castel del Monte *	Yes - P		707	447	387
	S. Stefano di Sessanio	Yes - P		142	111	529
	Villa S. Lucia	Yes - P		305	141	2767
5	Torre de' Passeri	No	No Plan	3.299	3.174	149
	Brittoli	Yes - P	Approved - R: *Univ. Chieti-Pescara*	470	335	387
	Bussi sul Tirino*	Yes - I		3.236	2.636	300
	Civitella Casan.	Yes - P		2.156	1.875	265
	Cugnoli	Yes - I		1.752	1.590	216
	Montebello di Bertona	Yes - P		1.183	1.023	290
	Popoli	Yes - I		5.755	5.450	200
	Ofena	Yes - P		757	527	500
	Capestrano	Yes - I	Approved - F	1.141	895	453
Notes	* Leader Municipality (◊) Included also in the Crater of Central Italy's earthquake (24 August 2016) (×) Currently part of HA6	I: Intermed. P: Periph.	F: Freelance R: Research Institute //: missing information *data: www.usrc.it*			$\frac{over65}{under15}\%$ *data: www.ottomilacensus.istat.it*

HA	Municipality	Inner Area	Reconstr. Plans: Implementation and Designers	Inhabit. 1991 Census	Inhabit. 2011 Census	Ageing Index (2011)
6	Caporciano *	Yes - I	Approved - R: *Univ. Chieti-Pesc.*	324	235	352
	Navelli	Yes - I	Approved - R: *Univ. Parma*	700	550	304
	Prata d'Ansid.	Yes - I	Approved - F	616	501	267
	San Pio delle Camere	Yes - I	Approved - R: *Univ. Pisa et al.*	554	613	130
	Carap.Calv. Castelv.Calv.	*H.A. 4*				
7	Bugnara	Yes - I	Approved - R: *Univ. L'Aquila*	1.161	1.106	238
	Castel di Ieri	Yes - P	Approved - R: *Univ. Chieti-Pesc.*	437	329	465
	Castelvecchio Subequo	Yes - P		1.448	1.067	524
	Cocullo	Yes - I		416	265	885
	Collarmele	No	Approved - / /	1.051	950	248
	Gagliano Aterno	Yes - P	Approved - / /	396	255	344
	Goriano Sicoli*	Yes - P	Approved - / /	685	597	261
8	Acciano	Yes - P	Approved - R: *Univ. Firenze*	538	351	609
	Barisciano *	Yes - I	Approved - R: *Univ. Camerino*	1.768	1.853	210
	Ocre	Yes - I		984	1.100	185
	Fagnano Alto	Yes - I	Approved - F	499	440	255
	Fontecchio	Yes - I	Approved - R: *Politecn. Milano*	469	410	289
	Poggio Picenze	No	Approved - / /	917	1.068	131
	San Demetrio ne' Vestini	No	Approved - R: *Univ. Chieti-Pesc.*	1.553	1.836	151
	Sant'Eusanio F.	No	Approved - R: *Univ. L'Aquila*	462	418	287
	Tione degli Abr.	Yes - P		485	326	441
	Fossa	No	Approved - R: *Univ. Catania*	630	690	148
	Villa S.Angelo	Yes - I		480	425	206
9	Lucoli	No	Approved - R: *Univ. Sapienza*	1.046	1.019	241
	Ovindoli	Yes - I		1.204	1.190	257
	Rocca di Cambio	Yes - P		447	504	335
	Rocca di Mezzo*	Yes - P		1.531	1.468	346
			Abruzzo:	*1.249.054*	*1.307.009*	*167*
			Italy:	*56.778.031*	*59.433.744*	*149*
Notes	* Leader Municipality (◊) Included also in the Crater of Central Italy's earthquake (24 August 2016) (×) Currently part of HA6	I: Intermed. P: Periph.	F: Freelance R: Research Instititute //: missing information *data: www.usrc.it*			$\frac{over65}{under15}\%$ *data: www.ottomilacensus.istat.it*

Source: Author's elaboration.

The HAs no. 4, 5 and 9 are the only cases in which Plans have been designed by the same researchers, except for two other municipalities. An investigation into these Plans was carried out in order to understand how these tools tried to meet the general goals of the reconstruction, in particular how to promote socio-economic development trajectories. Nevertheless specific peculiarities for each HA, common themes emerge across the Plans. All of them have chosen a multidisciplinary and multiscale approach to fulfil the wide technical and legislative ambitions stated in the regulations governing the reconstruction. Fundamental components of the Plans are prescriptive indications for the physical reconstruction of historical centres, therefore to answer the third goal of the laws: to facilitate the return of inhabitants in an anti-seismic built heritage. The Plans identify regulatory standards and specific typologies of intervention on urban fabrics, and congruent budget estimates. In order to control public expenditure, the employment of reconstruction funds is strictly guided by the level of damage induced by the quake adopting the normative criteria of the so-called "causality nexus" between damages and compensations (Law no. 77, art. 1, 3). According to the laws' requirements, the Plans contain also preliminary project proposals for the first and second goal of the reconstruction process. These proposals unsurprisingly involve a scale larger than the mere extension of the "perimetrazioni", and consequently they cannot have a mandatory role but only an indicative nature. All the analysed plans include pilot projects of urban regeneration (for promoting general improvements, introducing new functions and activities in the towns) as well as long-term strategic scenarios imagined for entire HAs. The wide-scale scenarios call general realm of interventions in all three HAs investigated, based mainly on the promotion of naturalistic tourism and sustainable local agriculture, a strategy suggested by the high environmental quality of these territories.

THE SEISMIC CRATER AS AN INNER AREA PUT TO THE TEST

Looking at Abruzzo's ongoing reconstruction through the lens of SNAI, many similarities emerge between the normative and institutional frameworks ruling the post-earthquake recovery and the strategy for inner areas, in particular related to territorial characteristics, tools, long-term goals and emerging themes of debate. The Crater's recovery process offers the chance to tangibly explore bottlenecks and criticalities in fostering new forms of local development in fragile areas, especially related to:

a. the promotion of inter-municipal cooperation and forms of innovative governance;
b. the unsolved relation between claims of safeguard, restoration and transformation ;
c. the definition of long-term development scenarios to enhance territorial capital.

Polycentrism and inter-municipal cooperation

Encouraging inter-municipal and inter-institutional cooperation through clustering municipalities in HAs was a necessary step to reach the broad goals stated by the special laws for the reconstruction. As defined also by SNAI, Italy is a polycentric territorial system: the Crater as well is a network system among minor villages (together with their mountainous landscapes) and Abruzzo's major urban poles, L'Aquila firstly (as shown previously in Figure 2). The organisation of municipalities in HAs could represent an opportunity to strengthen the Crater's inner relations and to introduce innovative governance grounded on productive intersections between national and local outlooks and shared development scenarios. The strategy appears controversial in its implementation: the effective cooperation among

institutions is questionable since HAs have no normative authority on single municipalities but are only temporary unions. If it is acknowledged that cooperation among neighbouring municipalities can increase the scope of action of single towns (Lintz, 2016, p. 957), the difficulties of voluntary collaboration emerge in the actual design and implementation of shared policies, above all if merging sectorial tools and large-scale perspectives. A symptom of this weakness is the internal fragmentation of HAs for what concerning the Reconstruction Plans, demonstrated by Table 2: only three HAs have unitary plans planned by the same designers, and two municipalities even "switched" HA. Such resistance to sharing common trajectories is even more alarming in the light of the modest demographic dimension of the municipalities and their very high ageing index (higher than Abruzzo's and Italy's[9]). Ultimately, even when the Plans propose common projects for a larger territorial scale, they envision scenarios without any mandatory role, fading the unity achieved.

The establishment of two special Offices, one dedicated to L'Aquila and one to the Crater, if crucial for administrative and managerial reasons, makes necessary a specific commitment to building joint policies at a regional systemic scale and to strengthen the relations within L'Aquila's territory. On the contrary, the risk is to incongruously exacerbate a separation between "urban" and "not-urban" actors and systems, a risk emerging also in the lines of SNAI definition, as highlighted by Urso (2016, p. 460): "Can periphery be governed without an urban 'node'?".

[9] *Italian ageing index is the second highest in the European Union according to last Eurostat data (Eurostat, 2016).*

Between restoration and transformation

The legislation issued after the earthquake entrusts the reconstruction process of ambitious short-term and long-term goals, as along with the Reconstruction Plans, for avoiding a mere "physical rebuilding" and exploiting the recovery phase to address economic and social matters. Despite the acknowledged purposes of conceiving scenarios able to combine safeguard and development of the settlements (Fabietti, 2012), the same legislation limits the potential effect of the Plans, and the different binding roles of tools and sub-tools contribute to disconnect the physical reconstruction from social and economic long-term strategies. The often narrow perimeters of the Reconstruction Plans, together with the necessary control of the public expenditure through the "causality nexus" between damages and compensations, reduce transformative purposes. The time delay in setting and approving the Plans (eight are not in force yet) has progressively favoured strategies aiming at a quick return to previous conditions and focused on the urgent rehabilitation of building stocks. Also, the partial function of HAs as binding territorial units did not push for the setting of durable collective scenarios. Consequently, even if all the Plans for HAs 4, 5 and 9 refuse an approach oriented to restore the "status-quo" or pre-existing conditions (therefore in line with the original goals of Law no. 77 and Decree no. 3), their contradictory regulatory roles weaken the efforts put on the ground to promote larger development projects. How to fully exploit the cognitive and experimental value of the Plans, which are often the outputs of large research activities or academic collaborations? Difficulties in fully leveraging on research, breaking "silos mentality" and strengthening local (technical and institutional) competence emerge also from the debate concerning SNAI: the expression "enemies of Inner Areas" has been used to define "promoters of

closed local communities, which prevent and obstruct innovation process within and among territories" (Barca et al., 2014, p. 10).

Long-term development and territorial capital

The Crater is a fragile area because of the ongoing depopulation, aged and ageing communities, weak local economies and problematic mobility (mainly caused by the mountainous orography and the absence of an efficient railway system). As already illustrated, to foster long-term development is among the main broad goals of the special post-earthquake legislation, originated by the collective aim of avoiding social and economic difficulties that characterised previous post-disaster recovery paths in Italy. Inner Areas as well as the Crater mostly have a dramatic ageing index and lack ordinary capacities to attract investors and coordinate funds-programs or partnerships. To define redevelopment strategies and to implement them in a fragmented territory is definitely a crucial issue. The Plans for HAs 4, 5 and 9 propose preliminary insights and large scale projects to support local economies and communities: they call for a general strengthening of local services, both to increase the attractiveness of these regions for future inhabitants and investors, both to provide an adequate access to services for the present communities, aged mostly. As clearly affirmed by the Plans' designers, these long-term and large-scale scenarios represent preliminary proposals to address crucial issues – like an integrated system of services at over-municipal scale – which deserve to be target of essential policies, wider than what a reconstruction plan can design and imagine (Caravaggi, 2013; Clementi, 2012; Università degli Studi di Padova, Consiglio Nazionale delle Ricerche, Politecnico di Milano, & Sapienza Università di Roma, 2012). Forms of "policy mobility" appear evidently both in the Plans, both in the recent debate on inner areas. In all the analysed Plans, tourism and sustainable agriculture

devoted to local productions emerge as interconnected key sectors to relaunch the economic base embedding the reconstruction of "cultural values". The high environmental and landscape quality makes these places certainly appropriate for nature tourism, already existing; sustainable agriculture is considered an economic sector to reinforce and enlarge for increasing job opportunities and improving local incomes, reducing hydrogeological instabilities and safeguarding biodiversity. Tourism arises as a kind of "panacea" in the general debate about the Crater's future: special funding for promoting tourism-related activities were assigned to the Crater in October 2015[10]; likewise, many first pilot strategies elaborated for SNAI base their focus on the touristic sector. The chances of a lasting success of tourism as unique engine of development for fragile territories seem rare if touristic activities are not included in a broader and skilled chain of *production* – overcoming the perception of tourism as chain of *consumption*[11]. First evaluations of SNAI's preliminary pilot strategies show a very low frequency of the word "job" in their reports, surprising per se and even more if compared to the high frequency of the word "tourism" (Punziano & Urso, 2016). The priority given to the reconstruction of the built environment, postponing larger development projects, can be deduced from the official funding flows for Abruzzo[12]: between April 2009 and

[10] *Decrees of the Ministry for Economic Development, 14 October 2015 and 3 March 2016.*

[11] *Notes of the author from Fabrizio Barca's final remarks at the seminar "Il turismo nelle Aree Interne" (L'Aquila, Gran Sasso Science Institute Lecture Hall, May 31st – June 1st 2016). See also the video interview to Fabrizio Barca by R. Ciuffini "*Aree interne, Barca: Turismo non basta" available at www.news-town.it.

[12] *Data available on the web page dedicated to Abruzzo's reconstruction in the website of the Department for Economic Planning and Coordination of the Presidency of the Council of Ministers (C.I.P.E.), accessed on 2nd October 2016: www.programmazioneeconomica.gov.it/2015/12/30/ricostruire-labruzzo-3/*

December 2015 Italian governments allocated more than 8,4 billion euros for the reconstruction, of which 76% for the reconstruction of private buildings and 12% for public buildings; only remaining 12% has been allocated among school building, infrastructures, sustain to industry and research, etc. Data referred only to the minor towns of the Crater for the period 2009-2016 confirm a similar divide: the so-called "private reconstruction" has been financed for about 1.530 million euros, while the funds allocated for "public and school reconstruction" count about 355 million euros[13]. Only in August 2016 the Interministerial Economic Planning Committee (C.I.P.E.) approved a "Development program" (called "ReStart") for about 220 million euros to be used by 2020 , and a "Plan of interventions for promoting public reconstruction" for about 57 million euros, both referred to the Seismic Crater[14]. In regard of the very recent earthquake in central Italy, Enrico Borghi, special adviser for S.N.A.I at the Presidency of the Council of Ministers, highlights questions about "reconstruction for what?", underlining the necessity of tying the reconstruction to the issues of livelihood and economic vocation of the affected communities and places, to ensure a territorial rebirth avoiding empty "museumifications" (Maccaferri, 2016).

CONCLUSIONS: THE SEISMIC CRATER AS A PARADOXICAL INNER AREA

An evaluation on the Seismic Crater's reconstruction allows a closer investigation on the challenges of implementing (re)development

[13] *Data available on U.S.R.C. website at http://open.usrc.it/, accessed on 2nd October 2016.*
[14] *C.I.P.E. deliberations dated 10 August 2016confirm what already stated by Law no. 125/2015, Art. 11, 12.*

strategies in shrinking territories. Looking at the Crater through the lens of SNAI, it emerges as a peculiar paradoxical territory: on the one hand, pre-existing disadvantages, marginalisation and fragilities typical of Italian inner areas already characterised the entire Crater, and were worsened by the earthquake, adding new specific challenges to face. On the other hand, post-earthquake reconstruction and related funds offered the chance to open up a new debate in the same territory. The Crater can rely on uncommon economic opportunities, dedicated research activities, specialised technical and human skills to build innovative patterns of place-based development and cooperation. Interpreting the reconstruction as occasion to boost local development and innovative governance besides the rebuilding of urban fabrics, it appears as a process that risks to combine high costs – due to the extension of the territory and the huge severity of the damages – with limited benefits – because of the small and aged local communities, and the delayed attention for a project dedicated to enhance territorial capital. The ambitious goals of combining maintenance and restoration with the definition of different future trajectories by enhancing inter-institutional cooperation and activating local inertias, are not fulfilled yet, despite the fairly innovative normative framework and a large deployment of scientific and economic dedicated resources. Moreover, those goals seem to be weakened by the implementation of that same legislative framework (the "causality nexus", the narrow perimeters of intervention of the Plans, the fragile associations of municipalities).

Abruzzo recent history seems a missed occasion to fully exploit the reconstruction phase to contrast the pre-existing socio-economic decline: the funding flows show that the rehabilitation of the building stock still emerges as the priority of the reconstruction, rather disjointed by a strategic recovery of territorial capital. Seven years after the earthquake, the reconstruction process denotes some criticalities in fostering long-term redevelopment plans; awareness

and experiences coming from cases like the Crater can be beneficial in questioning policies for Italian inner areas and communities, and vice versa. The main demanding tasks emerging from this study concerns how: to foster an effective and fruitful inter-municipality cooperation overcoming common local resistances towards "time and resource consuming" joint actions; to characterise flexible tools and time horizons to combine long-term perspectives, supra-local scales and control of public expenditure; to fully leverage and circulate the available cognitive contributions to support long-term development paths and policies. The debates about Abruzzo's reconstruction and about SNAI's first steps suggest that the first antagonists of new development strategies lie in the lack of capabilities in designing and implementing innovations, more than in the lack of chances.

REFERENCES

Agenzia per la Coesione Territoriale. (2014a). *Classificazione dei Comuni italiani secondo la metodologia per la definizione delle Aree Interne*. Open Aree Interne - Base Dati Comunale. Retrieved on 1st September 2016, from: www.agenziacoesione.gov.it/opencms/export/sites/dps/it/documentazione/Aree_interne/Classificazione_comuni_2014.csv

Agenzia per la Coesione Territoriale. (2014b). *Database indicatori e variabili comunali*. Open Aree Interne - Base Dati Comunale. Retrieved on 1st September 2016, from: www.agenziacoesione.gov.it/opencms/export/sites/dps/it/documentazione/Aree_interne/Database_indicatori_e_variabili_comunali-25072014.csv

Agenzia per la Coesione Territoriale. (2014c). *Indicatori per la "Diagnosi aperta" delle aree-progetto: Regione Abruzzo*. Open Aree Interne - Indicatori per la "Diagnosi aperta" delle aree-progetto utilizzati durante l'istruttoria. Retrieved on 1st September 2016, from: www.agenziacoesione.gov.it/opencms/export/sites/dps/it/documentazione/Aree_interne/Abruzzo/ABRUZZO_-_Indicatori_per_la_DIAGNOSI_APERTA.csv

ANCE, & CRESME. (2012). *Lo stato del territorio italiano 2012. Insediamento e rischio sismico e idrogeologico*. Retrieved on 1st September 2016, from: www.camera.it/temiap/temi16/CRESME_rischiosismico.pdf

Barca, F. (2016, June 2nd) *Aree interne, Barca: "Turismo non basta"/Interviewer: R. Ciuffini*. Retrieved on 1st September 2016, from: http://news-town.it/politica/12217-fabrizio-barca-a-l-aquila-per-parlare-di-turismo-nelle-aree-interne-l-intervista-sul-pd-partito-organizzato-male,-da-renzi-aspetto-risposte-il-referendum-non-ho-ancora-deciso.html

Barca, F., Casavola, P., & Lucatelli, S. (2014). A strategy for inner areas in Italy: Definition, objectives, tools and governance. *Materiali UVAL-Documenti: Vol. 31*: UVAL.

Boschi, E., Guidoboni, E., Ferrari, G., Valensise, G., & Gasperini, P. (Eds.). (1997). *Catalogo dei forti terremoti in Italia dal 461 a. C. al 1990. Vol. 2.* Roma, Bologna: Istituto nazionale di geofisica, SGA.

Caravaggi, L. (2013). *Questa* ricostruzione. In L. Caravaggi, O. Carpenzano, A. Fioritto, C. Imbroglini, & L. Sorrentino (Eds.), *Ricostruzione e governo del rischio. Piani di ricostruzione post sisma dei Comuni di Lucoli, Ovindoli, Rocca di Cambio e Rocca di Mezzo (L'Aquila).* (pp. 28-53). Roma: Quodlibet.

Clementi, A. (2012). Innovazioni alla prova. In A. Clementi & M. Di Venosa (Eds.), *Pianificare la ricostruzione: sette esperienze dall'Abruzzo* (pp. 17-34). Venezia: Marsilio.

Comitato Nazionale Aree Interne. (2015). *Rapporto di Istruttoria per la Selezione delle Aree Interne. Regione Abruzzo.* Retrieved on September 2016, from: www.agenziacoesione.gov.it/opencms/export/sites/dps/it/documentazione/Aree_interne/Abruzzo/Abruzzo_istruttoria_24_03_2015.pdf

D.C.D.R. 3, 9 marzo 2010, Linee guida per la ricostruzione. Retrieved on 1st September 2016, from: www.commissarioperlaricostruzione.it/content/download/561/4049/file/Decreto_CD_003_9.3.10_LineeGuida_b.pdf

D.M. Ministero dello Sviluppo Economico, 3 marzo 2016, Modifiche al D.M. 14 ottobre 2015, concernente interventi offerta turistica nel territorio del cratere sismico aquilano.

D.M. Ministero dello Sviluppo Economico, 14 ottore 2015, Intervento per il turismo nel cratere sismico aquilano.

Delibera del Comitato Interministeriale per la Programmazione Economica (C.I.P.E.), 10 agosto 2016, Esito della seduta del 10 agosto 2016 - Sisma Regione Abruzzo.

Di Giovanni, G., & Chelleri, L. (Forthcoming). Sustainable Disaster Resilience? Tensions between socio-economic post-disaster recovery and built environment reconstruction in Abruzzo (Italy). In S. Deppisch (Ed.), *Urban regions now & tomorrow: between vulnerability, resilience and transition (working title)*. Springer.

Dipartimento per la programmazione e il coordinamento della politica economica della Presidenza del Consiglio dei Ministri, Ricostruire l'Abruzzo, accessed on 2nd October 2016: www.programmazioneeconomica.gov.it/2015/12/30/ricostruire-labruzzo-3/

Eurostat. (2016). *Population on 1 January by broad age group and sex*. Population (Demography, Migration and Projections). Retrieved on 1st September 2016, from: http://ec.europa.eu/eurostat/web/population-demography-migration-projections/population-data/database

Fabietti, V. (2012). Vulnerabilità sismica urbana. In A. Clementi & M. Di Venosa (Eds.), *Pianificare la ricostruzione: sette esperienze dall'Abruzzo* (pp. 59-69). Venezia: Marsilio.

Guidoboni, E., & Valensise, G. (2011). *Il peso economico e sociale dei disastri sismici in Italia negli ultimi 150 anni, 1861 - 2011*. Bologna: Bononia University press.

Istat, (2016). *Popolazione residente per età, sesso e stato civile al 1° gennaio*. Popolazione residente. Retrieved on 1st September 2016, from: http://demo.istat.it/pop2016/index.html

L. 134, 7 agosto 2012, Conversione in legge, con modificazioni, del decreto-legge 22 giugno 2012, n. 83, recante misure urgenti per la crescita del Paese.

L. 77, 24 giugno 2009, Conversione in legge, con modificazioni, del decreto-legge 28 aprile 2009, n. 39, recante interventi urgenti in favore delle popolazioni colpite dagli eventi sismici nella regione Abruzzo nel mese di aprile 2009 e ulteriori interventi urgenti di protezione civile.

Lintz, G. (2016). A conceptual framework for analysing inter-municipal cooperation on the environment. *Regional Studies*, *50*(6), 956-970. doi: http://dx.doi.org/10.1080/00343404.2015.1020776

Maccaferri, A. (2016, September 28th). I luoghi sostenibili solo se sviluppati. *Il Sole24ore*. Retrieved on 2nd October 2016, from: www.ilsole24ore.com/art/impresa-e-territori/2016-09-29/i-luoghi-sostenibili-solo-se-sviluppati-105746.shtml?uuid=ADQ56qKB

Mazzoleni, D., & Sepe, M. (Eds.). (2005). *Rischio sismico, paesaggio, architettura: l'Irpinia, contributi per un progetto*. Napoli: Universita degli studi di Napoli Federico II.

National Strategy for Inner Areas, accessed on 1st September 2016: www.agenziacoesione.gov.it/it/arint/

National Strategy for Inner Areas - Abruzzo Region Dossiers and Policy Documents, accessed on 1st September 2016: www.agenziacoesione.gov.it/it/arint/Eventi/Regione_Abruzzo/index.html

National Strategy for Inner Areas - Open Data, accessed on 1st September 2016: www.agenziacoesione.gov.it/it/arint/OpenAreeInterne/index.html

Nimis, G. P. (2009). *Terre mobili: dal Belice al Friuli, dall'Umbria all'Abruzzo*. Roma: Donzelli.

OECD. (2013). *Policy making after disasters: helping regions become resilient. The case of post-earthquake Abruzzo*. Retrieved on 1st September 2016, from: www.keepeek.com/Digital-Asset-Management/oecd/urban-rural-and-regional-development/l-azione-delle-politiche-a-seguito-di-disastri-naturali_9789264189621-it#page4

Punziano, G., & Urso, G. (2016). *What kind of development for inner areas? A content analysis on the preliminary draft of planning documents*. Paper presented at the RSA Annual Conference 2016 - Building Bridges: Cities and Regions in a Transnational World, Graz - 5th April 2016.

Rovida, A., Locati, M., Camassi, R., Lolli, B., & Gasperini, P. (eds), (2016). *CPTI15, the 2015 version of the Parametric Catalogue of Italian Earthquakes*. Istituto Nazionale di Geofisica e Vulcanologia, doi: http://doi.org/10.6092/INGV.IT-CPTI15. Retrieved on 1st September 2016, from: http://emidius.mi.ingv.it/CPTI15-DBMI15/download_CPTI15.htm

Trigila, A., Iadanza, C., Bussettini, M., Lastoria, B., & Barbano, A. (2015). *Dissesto idrogeologico in Italia: pericolosità e indicatori di rischio. Rapporto 2015* (233/2015). Retrieved on1st September 2016, from: www.isprambiente.gov.it/it/pubblicazioni/rapporti/dissesto-idrogeologico-in-italia-pericolosita-e-indicatori-di-rischio-rapporto-2015

Ufficio Speciale per la Ricostruzione dei Comuni del Cratere - Open Data, accessed on 2nd October 2016: http://open.usrc.it/

Università degli Studi di Padova, Consiglio Nazionale delle Ricerche, Politecnico di Milano, & Sapienza Università di Roma. (2012). *Piano di Ricostruzione Area Omogenea 4, Comune di Castel del Monte. Tav. 14 - Proposte per lo sviluppo socio-economico*. Retrieved on 1st September 2016, from: www.halleyweb.com/c066026/zf/index.php/modulistica/index/dettaglio-area/area/10?sat=1478272083&nodo=nodo5#

Urso, G. (2016). Polycentric Development Policies: A Reflection on the Italian "National Strategy for Inner Areas". *Procedia - Social and Behavioral Sciences, 223*, 456-461. doi: http://dx.doi.org/10.1016/j.sbspro.2016.05.275

Short Author Biography:

Grazia Di Giovanni is an Italian urban planner and Ph.D. student in Urban Studies at Gran Sasso Science Institute in L'Aquila (Italy). Her research interests are focused on urban resilience and the role of urban and landscape design and planning in enabling adaptation to nature-related risks. She has previously published in TeMA Journal of Land Use, Mobility and Environment.