The role of local communities in a global risk landscape

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DOI:
10.33612/diss.131472776

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2020

Link to publication in University of Groningen/UMCG research database

Citation for published version (APA):

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Chapter 10

What needs to be transformed? Response to the research questions
Response to the research questions

Introduction

The primary aim of this PhD was to enlarge the theoretical and practical domain of SIA, especially to better conceptualize the cognitive and interactional dimensions of local community resilience, and to consider how to build resilience at all levels of society. Achieving this would increase understanding of the social processes (i.e. individual and collective agency) that enable social learning and transformation at the local community level and that make external actors capable of engaging and strengthening learning and transformation at all levels of society. To achieve this research aim, three research objectives were developed: (i) to understand resilience and how it comes into action at the local community level; (ii) to improve SIA theory and practice and explore how it can enhance local community resilience; and (iii) to identify and address the main constraints that undermine resilience-building at the local community level and other levels of society. In this Chapter, I describe and reflect on the key findings of this PhD research, and answer the main research question: What role should Social Impact Assessment play in disaster management and development interventions so that social development outcomes, such as community resilience, are achieved?

This research project considered disasters, in all their tragedy, as opportunities for social scientists to understand and analyse basic social processes and structures in crisis conditions, during which adaptation, resilience and innovation are often more clearly revealed than in ‘normal’ situations (Rodriguez et al., 2007, see Chapter 1). The whole PhD research was based on an analysis of the 6 April 2009 earthquake in L’Aquila, Italy. It encompassed the different phases of disaster management carried out by the Italian state and national and local civil protection authorities in L’Aquila (Abruzzo region, Italy), both before and after the 6 April 2009 earthquake: preparedness (Chapter 5), emergency response and recovery (Chapters 3 and 6), reconstruction (Chapters 7 and 8) and re-development (Chapter 4). This PhD research sits at the intersection between anthropological studies and sociological studies (see Chapter 2). It refers to the anthropology of disasters in that it is based on the qualitative and contextual data that came from the ethnographic methods I used during the three years the State of Emergency remained in force and beyond (see Chapter 2). It refers to the sociology of disasters in that it is also based on the data that came from analytic autoethnography, systematic, retrospective analysis of the findings of my ethnographic fieldwork, document and media analysis, and retrospective after-action interviewing, which are methods typically used by the sociology of disasters to cross-check and triangulate data coming from systematic observation in the field, and provide reliable evidence that can find general application (Mileti, 1987; Tierney et al., 2001; Quarantelli, 2005; Burger et al., 2019).

The findings from my research lead to 3 main conclusions. First, both before and after disasters, local people (i.e. individuals, groups and communities), even the most vulnerable, develop positive cognitive and interactional capacities that enable them to individually and collectively learn, transform and be resilient in times of crises and disasters (see Chapter 3). Important for this PhD research was to appreciate that local communities living on the frontline of disaster risks and impacts, rather than experiencing anxiety, panic, collective hysteria or shock, and rather than creating unjustified alarmism, chaos or looting, develop individual and collective processes that lead their members to collectively learn from increasing local vulnerabilities and exposure to disaster risks and impacts, and to meaningfully transform: (1) before disasters, towards reducing (or demanding reduction of) local vulnerabilities and risks affecting especially the most vulnerable (see Chapter 5); and (2) after disasters, towards addressing disaster impacts, especially those affecting the most vulnerable member of a community or those most in danger; reducing or
demanding to reduce local vulnerabilities, risks and the root causes of disasters; and enhancing or demanding to enhance local DRR, wellbeing and resilience (see Chapter 3).

Second, SIA can enhance and strengthen resilience at the local community level if it enlarges its theory and practice, and if it implements the specific actions suggested by the SIA Framework for Action which are oriented to co-produce with local communities a transformative knowledge oriented towards understanding, recognising, engaging and empowering the cognitive and interactional dimensions of resilience as it emerges at the local community level. Important to appreciate for this PhD research, was that enacting a transformative knowledge co-production process concerning local community wellbeing, vulnerabilities, risks and impacts and associated local needs, desires and capacities, leads members of local communities to learn that they have common problems, and to transform towards developing common solutions, thus strengthening resilience at the local community level and at other levels of society. It was also important to appreciate how establishing new forms of community agreements and social networks around this common vision can enhance cooperation and mutual aid towards reducing local vulnerabilities, risks and impacts affecting especially the most vulnerable and the commons, increasing equity, inclusion, transparency, and accountability, sharing priorities of intervention intended goals and desired outcomes, and empowering socially sustainable transformations (see Chapter 4).

Third, there are 3 main sets of constraints at the scientific, institutional, and socio-cultural levels that undermine the ability of SIA and the SIA Framework for Action to be fully applied in post-disaster and development interventions and that undermine social learning, sustainable transformation and resilience in times of crises and disasters. At the scientific level, for this PhD research it was important to learn that, both before and after disasters, the knowledge concerning local vulnerabilities, risks, and impacts arising from external interventions in times of crises and disasters is considered to be only techno-scientific advice addressed to serve national and local civil protection authorities, and other external and local actors (i.e. decision-makers, proponents and investors) and their purposes, rather than being inclusive, transformative and co-produced to support social learning and sustainable transformation at the local community level and other levels of society (see Chapter 5 and 8).

At the political-institutional level, it was important to learn that the institutional and financial strategies that typically accompany external disaster management and development interventions (i.e. emergency powers, command-and-control and top-down planning) undermine accountability and transparency, disrupt the local democratic governance, allow derogations from ordinary laws, including public procurement, anti-organised crime controls, and environmental, social, and public health safeguard regulations. These institutional and financial arrangements are vulnerable to rent-seeking, elite capture, disaster capitalism and organised crime infiltration at the local, national, and international levels, and they lead external actors to ignoring and excluding local community resilience, rather than effectively engaging and empowering it. They reflect the political intent to command-and-control financial, economic, and local natural resources, the local built environment, and likely deviant behaviours of local communities, rather than reflecting the public intent to enhance DRR and build resilience at the local community level and at other levels of society (see Chapter 5, 6, 7 and 8).

At the socio-cultural level, for this PhD research, it was important to learn that, within affected local communities, while there is potential for resilience (see Chapter 3 and 5), there is also potential for the command-and-control, emergency powers (and derogations), top-down planning to be transferred on local authorities, for social risks processes to arise (e.g. inequity and social exclusion), and for empathy to be turned into fear and suspicion; for social responsibility to be turned into a gold rush; and for mutual aid to be turned into rent seeking, elite capture, disaster capitalism, mafia infiltration and corruption (see Chapter 6, 7 and 8). The ‘mechanism’, meaning
the way external interventions are decided, conceived, designed and implemented both at the cognitive (i.e. scientific knowledge, sets of beliefs, values and myths, culture and media communication) and interactional level (i.e. institutional and financial arrangements, management and planning models, and power geometries) can lead to strengthen positive inner local community social trends or negative ones, depending also on the culture they bring about.

Overall, to build resilience, it is crucial that external interventions, and the scientific knowledge, institutional and financial arrangements, management and planning models through which they are conceived, decided, designed and implemented contribute to the building a glocal culture of resilience at the local community level and at other level of society, rather than reflecting the political intent to command-and-control, and facilitating (and protecting) a culture of disaster capitalism (see Chapter 5, 6, 7, 8 and 9). This glocal culture of resilience should nourish and be nourished by positive individual and collective feelings (empathy), attitudes (caring and social responsibilities), actions and behaviours (mutual aid and cooperation), knowledge, beliefs, values, narratives, needs, desires, and capacities conducive to: (i) strengthening the local sense of community, sense of place and sense of risk; (ii) reducing local vulnerabilities, risks and impacts, and the root causes of disaster; and (iii) enhancing the multiple dimensions of local community wellbeing, DRR and resilience at all levels of society.

Disaster myths, prejudices, fear and suspicion; a paternalistic attitude of top-down protection; the military-like idea of the only man in charge; the power geometries established by the State of Emergency, the derogations and state secrecy provisions provided by emergency powers; the top-down management and planning approaches (i.e. command-and-control and top-down planning); the techno-scientific knowledge; the political intent to command-and-control resources (e.g. financial resources, natural resources, the built environment and associated land use, environmental, social protection and planning approaches); and the set of beliefs and values comprising its world-view (see Chapter 6, 7 and 8), facilitate rent-seeking, elite capture organised crime infiltration and corruption, and a culture of disaster capitalism rather than building a glocal culture of resilience and a public ethic towards local vulnerabilities and the most vulnerable.

An overview of the contribution of this PhD research to the literature

Part 1, Understanding local community resilience and how SIA can enhance it, provides empirical evidence about what is community resilience and how it comes into action (Chapter 3), and how SIA can strengthen it in sustainable rural development practice in mountain and disaster-prone regions (Chapter 4). This Part is a social scientific contribution to rural sociology, the anthropology of disasters, the sociology of disasters and the SES and sustainable natural resource management (NRM) fields (e.g. Carpenter and Gunderson, 2001; Berkes et al., 2003; Bouwen and Taiule, 2004; Magis, 2010; Davidson, 2010; Armitage et al., 2010; Berkes and Ross, 2013, 2016; Patterson et al., 2015, 2017). It is also a contribution to development studies, and, more precisely, to the discourse of sustainable development and social development outcomes in development planning in vulnerable regions (e.g. mountain areas) (e.g. Price and Kim 1999; Price 2003; Barkin 2010; 2012; Pahl et al., 2010; FAO 2011; Gurung et al., 2012; Future Earth 2014; Patterson et al., 2015; Drexler et al., 2016) and to the SIA literature (e.g. Vanclay, 2002; Vanclay and Esteves, 2011; Esteves et al., 2012; Vanclay et al., 2015). While knowledge concerning the local pre-conditions of resilience and the desirable outcomes increased (see Chapter 1), still little is said about the agency of resilient communities that makes them capable in times of crises and disasters to harness these pre-conditions and achieve desired outcomes through social learning and transformation (Berkes and Ross, 2013, 016). Little is said also about which methodology can enhance social learning, empower sustainable transformation and strengthen resilience at the local community level and at other levels of society (Berkes and Ross, 2013, 2016).
Chapter 3, *Experiencing local community resilience in action: Learning from post-disaster communities*, by forming the empirical basis to answer the research questions: *What is Community Resilience? How does it come into Action?* It is oriented towards filling the gaps in rural sociology, the sociology of disasters, the anthropology of disasters, the social-ecological system (SES) and the natural resource management (NRM) literature about local community resilience and its agency. Chapter 4, *Using Social Impact Assessment to strengthen community resilience in sustainable rural development in mountain areas*, by providing the empirical basis to answer the research question *How can SIA enhance community resilience in practice?* It is oriented towards filling the gaps in SIA theory and practice (see Chapter 1).

Part 2, *Understanding main scientific, institutional, and socio-cultural constraints*, provides the empirical evidence of the structural failures produced by the top-down, command-and-control approach adopted by national and local civil protection authorities during the earthquake swarm preceding the 6 April 2009 L’Aquila earthquake (Chapter 5, *Reflections on the L’Aquila Trial and the social dimensions of disaster risks*), and during the recovery (Chapter 6, *Command-and-control, emergency powers, and the failure to follow the United Nations disaster management principles after the 6 April 2009 L’Aquila earthquake*) and reconstruction processes following the disaster (Chapter 7, *Disaster capitalism and the failures to build community resilience in post-disaster situations: Learning from the 2009 L’Aquila earthquake*; and Chapter 8, *The top-down approach in post-disaster reconstruction and the failure to ‘build back better’ resilient communities after disaster: Lessons learned from the 2009 L’Aquila Italy earthquake*).

This Part is a social scientific contribution to disaster studies. Previous social scientific contributions have contributed to a crucial shift in disaster management thinking from a ‘war approach’ paradigm, to understanding the ‘root causes’ of disasters and disaster risks (Oliver-Smith et al., 2017), situating disasters in the context of socially-produced vulnerability (e.g. Oliver-Smith, 1977; Haas et al., 1977; Bates, 1982; Perry et al., 1983, 1990, 2002; Quarantelli, 1995; Quarantelli, 1998; Perry and Quarantelli, 2005; Drabek McEntire, 2003; Perry and Quarantelli, 2005; Tierney et al., 2006; Alexander, 2007; Solnit, 2009; Oliver-Smith et al., 2017; Rodríguez et al., 2018). However, there is still a lack of understanding about what are the main drivers and constraints in disaster management and development that can lead to, or may undermine social (and institutional) learning and transformation and resilience-building at the local community level, and other levels of society, before and after disasters, and before, during, and after post-disaster and development interventions (Gall et al., 2014).

While disaster research keeps providing evidence of how too often crises, disasters, and post-disaster interventions, become windows of opportunities to facilitate (and protect) disaster capitalism (e.g. Klein, 2007; Escaleras et al., 2007, 2016; Gunewardena and Schuller, 2008; Owen, 2011; Choudury and Haque, 2016; Pyles et al., 2017; Lewis, 2017; Lowenstein, 2018 Loewenstein, 2015; Naseck, 2018), the disaster capitalism construct has been little defined, and the literature in this field has not conceptualised yet: (i) the precise mechanism through which disaster capitalism gets implemented (and protected) in disaster recovery and reconstruction activities following disasters; (ii) the culture that accompanies disaster capitalism and its local and external root causes; (iii) the structural failures that all this produces on local community resilience at the cognitive (i.e. counter-productive learning) and interactional level (i.e. counterproductive transformation) and (iv) the negative consequences of all this on local community wellbeing. Moreover, current conceptualization of disaster capitalism does not consider that, being associated with the history of development and local inequity and vulnerability-creation processes and with a broader set of social risks characterizing societies at all levels of social organization, disaster capitalism may emerge also at the local community level.
Furthermore, the findings and reflections provided in Part 2 also serve to enhance understanding of the agency of building resilience at multiple levels of social organization (i.e. social resilience), and of the main counterproductive actions that may occur at the cognitive and interactional levels, both within local communities and external actors and organizations. This Part enriches SES and NRM theories and approaches to resilience by providing insights on the mechanism (i.e. the cognitive and interactional dimensions) through which external and local actors fail to enhance social learning and transformation and build resilience at the local community level and other levels of social organization. While in SES and NRM studies, efforts have been made to understand the relevance of social learning and transformation for environmental management, and the pathologies created at the environmental level by top-down approaches, little has been said about the social pathologies created on local communities by top-down, command-and-control approaches to local disaster risks and impacts, vulnerabilities, risks, capacities, and resources (e.g. financial resources, natural resources, the built environment and associated land use, environmental, social protection and planning approaches). How such approaches create social pathologies within the multiple dimensions of local community wellbeing and resilience, and how they affect the local communities’ capacities to learn and transform, and build resilience across times and landscapes are still little conceptualised (see Chapter 1).

Finally, most critiques related to the recovery process following the L’Aquila earthquake, primarily focussed on how the Italian government and the DCP carried out disaster recovery (Frisch, 2010; Alexander, 2010; 2013; OECD, 2013; Özerdem and Rufini, 2013; Fois and Forino, 2014; Forino, 2015; Calandra, 2016; Contreras et al., 2017). Conversely, there has been little research on the role of local authorities in the first interventions, especially regarding safety measures and disaster rubble management, and specifically about how the local authorities conducted these activities, the institutional arrangements and power geometries that existed, and whether these activities enabled inclusive social learning, sustainable transformation, and community resilience building at the local level. Part 2 provides a unique contribution to the literature in that it sheds light on how the command-and-control approach was also implemented by local authorities and on how all this undermined building back better more resilient communities.

Overall by providing empirical evidence of the structural failures of the Italian civil protection system at all levels of the state, including at the regional, provincial and municipal levels, the findings in Part 2 reveal that the shift from civil defence to civil protection (Alexander, 2002) did not bring any advance in disaster management and development practice in terms of DRR and resilience. The militaristic command-and-control approach, which is still in vogue among civil protection systems, means that national and local political leaders become the civil protection authorities of a disaster area. As the L’Aquila case shows, this facilitates (and protects) rent-seeking, elite capture, organised crime infiltration, disaster capitalism, corruption, inequity, and social exclusion at the local, regional, national, and international levels, exacerbates local social and environmental risks, and impacts, and inhibits local communities from learning, and from taking part in post-disaster interventions.

Drawing from the L’Aquila case and reflecting on the structural failures produced at all levels of society by civil protection systems, Part 2 advocates for a paradigm shift in disaster management and development practice, from centralised civil protection systems to decentralised community empowerment systems to better reduce local vulnerabilities and the root causes of disasters, enhance social learning and transformation and local community wellbeing, and build resilience at all levels of society, including at the local community level.

Part 3 of this PhD thesis it is called The role of local communities in a global risk landscape: What can be learned from the disaster front and what needs to be transformed? It draws from findings and evidence reported in Part 1 and 2, and provides conceptual advances to answer the
research questions about what can be learned in the fields of disaster studies, development studies, and impact assessment, and what needs to be transformed in these fields both at the theoretical and practical levels. Part 3 is a theoretical-practical scientific contribution to SES and NRM theory and approaches to resilience; disaster studies; regional development studies; and impact assessment generally. Chapter 9, *From assessing impacts to reducing risks from planned interventions: Revolutionizing Impact Assessment to include Disaster Risk Reduction and Resilience to achieve the Sustainable Development Goals* reflects on the implications that the DRR and resilience paradigm and the findings of this PhD research have in disaster management and in development and impact assessment thinking and practice. This Chapter reflects on the paradigm shift in disaster management thinking and practice that has been fostered by the DRR and resilience approach. It also reflects on the findings of Part 1 and Part 2 and outlines the social pathologies that top-down approaches adopted in disaster management, development, social protection and impact assessment practices produce on local communities, their wellbeing and resilience, and the main constraints that undermine these fields to fully integrate DRR and resilience-building strategies in their practices.

More specifically, Chapter 9 enriches the current debate in sustainable development and impact assessment thinking, and outlines that integrating DRR and resilience into development policies, plans, programs, and projects (4P) to meet the 2030 Agenda, requires a paradigm shift in Impact Assessment theory and practice similar to the one prompted by the DRR and resilience thinking in disaster management from ‘managing disaster impacts’ to ‘reducing the risk of disasters’. This Chapter advocates for a paradigm shift in Impact Assessment from managing the impacts, to reducing the risks of any planned intervention. It suggests that such a shift should contribute to changes in how Impact Assessment produce its scientific knowledge concerning local vulnerabilities, risks, and impacts, in how it perceives its institutional role within the governance of disaster management and development, and in post-disaster interventions, and in how it perceives its socio-cultural role in society. Such a paradigm shift in Impact Assessment should contribute to the building of a *Glocal Culture of Resilience* and help decision-makers, proponents, investors, and local communities better integrate the DRR and resilience paradigm in any planned intervention to build resilience at all levels of society and achieve the SDGs.

Chapter 10, *Final conclusion, response to the research questions, and recommendations*, draws from the findings and reflections in Part 1, Chapter 3, and, adopting an integrated SES approach to resilience (Berkes and Ross, 2013, 2016, see Chapter 1), it responds to the research question *What is resilience?* And related research sub-questions. Drawing from the findings and reflections in Part 1, Chapter 4, and enlarging the theoretical and practical domain of SIA (Vanclay et al., 2015, see Chapter 1), it responds to the research question *How can SIA enhance community resilience in practice?* And related research sub-questions. Furthermore, drawing from the findings and reflections, in Part 2, Chapter 5, 6, 7 and 8, and using the DRR and resilience paradigm it responds to the research question *What are the main constraints that undermine the effective enhancement of resilience at the local community level and other levels of society?* And related sub-questions. Finally, drawing from findings in Part 1 and Part 2, and theoretically exploring how DRR and resilience can be fully integrated in development and impact assessment theories and practices to achieve the SDGs, it responds to the research question *What can be learned by the fields of disaster studies, development studies, and impact assessment, and what needs to be transformed in these fields?* And related sub-question.
What is community resilience?

Community resilience is the set of the social survival processes that local communities put in action both at the cognitive and interactional level to learn, transform, and address the negative impacts they perceive as common problems in times of crises and disasters (see Chapter 3). Below, I summarize the findings and empirical evidence provided in Parts 1 and 2 of this thesis, and discuss how local community resilience came into action both before and after the 6 April 2009 L’Aquila earthquake. Drawing from the findings and empirical evidence I discuss here below, I will thus provide analytical answers to the research questions to provide a clear conceptualisation of the issues investigated that can find general application to all contexts affected by crises and disasters.

Community resilience in action before the 6 April 2009 L’Aquila earthquake

Before the 6 April 2009 L’Aquila earthquake, by living in an environment at risk characterized by an earthquake swarm lasting for more than 8 months and increasing in frequency and intensity (see Chapter 5), local people learned to recognise how the vulnerability of buildings was putting their lives at risk, especially the lives of the most vulnerable. While perceiving and experiencing local disaster risks, local people felt empathy towards the living conditions of the most vulnerable, particularly the elderly, students, and children. They started to care about their safety, and local schools were often closed for precaution. This local social learning process fed, and was fed by, an underlying feeling of empathy towards the most vulnerable and a shared attitude of caring and social responsibility in relation to local vulnerabilities and risks. Through these changes in their feelings and attitudes, local people re-oriented their individual and collective actions and behaviours towards positive learning and socially sustainable transformations. Local people learned from perceiving and experiencing local disaster risks, and were able to transform towards undertaking meaningful individual and collective actions to reduce or demand reduction of local vulnerabilities; and to enhance, or demand enhancement of local wellbeing and capacities (e.g. preparedness). They made comments at body corporate meetings about cracks appearing in buildings and how they were worsening over time. They demanded building inspections and to see civil protection plans, asking for effective local vulnerability and risk-reduction activities, and for building local capacities and enhancing local preparedness and emergency plans (see Chapter 5).

Furthermore, within the local communities there were local scientists and experts who, well before the earthquake, played a key role in managing local seismic monitoring stations, and/or in producing reports about the hazard and the vulnerabilities of the local built environment in the L’Aquila crater (see Chapter 5 and 8). Since at least the end of the 1990s, local scientists shared with the broader local public, through all forms of media and in person, the scientific knowledge they were producing. These initiatives sought to increase the local knowledge and public awareness concerning the endemic high seismic risks, vulnerability and hazard exposure affecting the L’Aquila crater. Since at least the end of the 1990s, local, regional, and national authorities were all well aware about the existence of highly vulnerable public and private buildings that were threatening the lives and safety of local people living in the L’Aquila crater. The public initiatives organized by local scientists over time aimed to enhance individual and collective social learning concerning the multiple dimensions of the disaster risk affecting the wellbeing of local communities. They were targeted to the local administration to demand improvement in those public and private buildings that were highly vulnerable and were threatening the lives and wellbeing of local people.
Community resilience in action after the 6 April 2009 L’Aquila earthquake

After the 6 April 2009 earthquake, by suffering the dramatic consequences of the disaster impacts, local people experienced changes in their needs concerning the mitigation of disaster impacts and changes in their feelings towards the most vulnerable. In the L’Aquila city and in the surrounding mountain and rural areas, local people learned from the disaster situation, and re-oriented their intentions towards saving the lives of those most in danger. This learning from the disaster situation fed, and was fed by, an instinctive feeling of empathy, solidarity, and an attitude of caring and social responsibility, which local people developed towards reducing local vulnerabilities, risk and impacts, and towards the most vulnerable and those most in danger (e.g. women, the elderly and children, irrespective of who they were). During the recovery activities, local people learned to recognise the needs of the most vulnerable and of those most in need. They produced and shared knowledge and narratives concerning disaster risks and impacts, and about how they disproportionally affected the most vulnerable and where they lived. Through multiple knowledge and communication platforms, they shared their collective need to mitigate disaster impacts and the likely strategies they developed to collectively reduce them (see Chapter 3).

Following the L’Aquila earthquake, local people also shared their local knowledge, their stories, and narratives about the place where they were living, their wellbeing, and their desire and capacity to mitigate disaster impacts and reduce the risk of future disasters (see Chapter 3). Through these narratives, they restored meaning to their destroyed places, better communicated their needs, coordinated their activities, and gained support from other social organizations, reinforcing their sense of community, sense of place and sense of risk (see Chapter 3). Through the production of this local knowledge and these collective narratives, local people learned to recognise vulnerabilities, risks and impacts, and how previous vulnerabilities contributed to making this disaster happen. They produced reports, enacted legal action, investigated and demanded investigations of the local root causes that made the disaster happen (see Chapter 5). They also developed ideas and project proposals alternative to the temporary housing scheme being implemented by the Italian Department of Civil Protection (DCP) and to the post-disaster reconstruction policies and interventions carried out by national and local authorities.

The social learning process enacted by these changes in feelings and attitudes, therefore, led local people to enact socially sustainable transformations, and positively re-oriented local people’s actions and behaviours. Immediately after the earthquake, most local people individually and collectively transformed towards helping each other and organizing themselves to rescue other people from the rubble, to cope with grief and sorrow, to deal better with the tragedy and loss, and to survive and rebuild sociality, reducing disaster impacts for those most in danger, enhancing the wellbeing and capacities of local communities, especially of the most vulnerable (e.g. elderly, children and women) (see Chapter 3). In the immediate aftermath of the disaster, many people were rescued by the widespread, spontaneous, ordinary collective actions made by normal people who started digging through the rubble and pulling out injured people (see Chapter 3).

The members of the local rural resilient communities we analysed first selflessly took care of the most vulnerable (e.g. the elderly and children), not only by feeding and assisting them, but also by including them and letting them develop their own capacities and participate in community recovery activities (see Chapter 3). Rural communities in the L’Aquila crater were capable of using the post-disaster situation as an opportunity to learn from identifying the problems they had, and to transform towards taking collective meaningful actions to reduce disaster impacts, mitigate vulnerabilities, and enhance community wellbeing and capacities (see Chapter 3). For example, the collective actions included: erecting tents, cleaning toilets, cooking, organizing shifts, doing the washing-up, sharing whatever resources they had, providing food to anyone who
needed it, sharing machinery or gravel, constructing temporary buildings, and identifying safer places to stay (see Chapter 3, Figures 3.1-3.6).

In the longer-term redevelopment interventions, local people were capable of developing positive feelings and attitudes of empathy, caring and social responsibility towards their common land, heritage and local vulnerabilities, thus turning their affected landscape into a landscape of affect (see Chapter 4). In the context of the sustainable rural development project described in Chapter 4, local people had the capacity of recognising that they had shared perceptions (and frustrations) about past development activities and their landscape, and that the abandonment and degradation of the local natural and cultural heritage was a common problem that needed shared solutions (see Chapter 4). In this process of social learning, local people learned from past development processes and failures, and transformed towards building new deliberative spaces and more sustainable development project proposals (see Chapter 4).

Community resilience of what to what?

Before the earthquake, the disturbance that was affecting the multiple dimensions of the wellbeing of people was a disaster risk characterized by several factors, both natural and social, including: (i) a natural hazard represented by an earthquake swarm, which lasted 8 months, increasing in extent and intensity; (ii) local vulnerabilities that were exacerbated by the earthquake swarm, and that were negatively influencing local people’s hazard exposure and perceptions and experiences of risks; and (iii) lack of capacity and preparedness at the local, regional and national levels (see Chapter 5). In addition to this, before the earthquake, the L’Aquila mountain area was already characterised by weak local governance and a weak culture of planning (OECD, 2012, 2013).

Between the 1950s and the late 1990s, urban areas surrounding L’Aquila expanded greatly, and this was a deregulated urbanization process with the L’Aquila area only being considered of ‘moderate seismicity’ (Zone 2) by the national seismic classifications issued in 1984 and 2003 (Alexander, 2010). In 1951 there were 54,633 inhabitants on 500 hectares; whereas in 2001 there were 68,503 inhabitants on 3,100 hectares (Frisch, 2010; Bazzucchi, 2012). While the population increased by around 25%, urban land consumption increased sixfold (Frisch, 2010). This growth was the result of the general laissez-faire approach of the L’Aquila municipality, which promoted urban development that over-exceeded the actual demand for housing. This growth was accompanied by the rising of a local elite in the cement and building industries and by the increasing pressure of speculative builders on urban planning policies in the L’Aquila province (Alexander, 2010, see Chapter 7). Thus, at the time of the 2009 earthquake, there were some 4,000 unoccupied apartments in the City of L’Aquila.

In the L’Aquila area, the poor state of buildings and related disaster risk was well known before the earthquake (Boschi, 1995; Barberi et al., 2007, see Chapter 5). The history of L’Aquila as a region marked by earthquakes killing thousands of people (e.g. 1349, 1461, 1703, 1984) (Guidoboni et al., 2012) was well known (see Chapter 5). Furthermore, the Barberi report (or LSU project) revealed in 1999 that L’Aquila had a high proportion of vulnerable buildings, with many modern buildings being especially vulnerable (Di Pasquale et al, 1999). The 2004 national seismic risk map (INGV, 2004) revealed that the whole province of L’Aquila had extreme seismic risk. The high seismic risk was already known thanks to research conducted by the chief of the Abruzzo regional seismic monitoring network of the National Seismic Service (NSS), Gaetano De Luca (e.g. De Luca et al, 2005, see Chapter 5). Furthermore, in 2005, the conclusion of the Barberi report (1999) was reconfirmed by the SAVE project (seismic vulnerability evaluation) (Dolce, 2005). As indicated to me by several people, in 2005 the Abruzzo Region commissioned a vulnerability assessment of public buildings that was undertaken by the local public/private consultancy firm, Collabora Engineering (later called Abruzzo Engineering). Unfortunately, only
a few copies of their report were made available and it appears that it is no longer available. People familiar with the report told me that there were many severe structural vulnerabilities, especially affecting public schools and the hospital.

Although these reports cost millions of euros each, they have been effectively ignored by governments at all levels. It was not intended that the process of development of these reports engage local communities or be transformative. According to Cherubini et al. (1998), L’Aquila had the oldest seismic classification in the Abruzzo region, and many modern concrete buildings were highly vulnerable. The city of L’Aquila has continued to be recognized as one of the most vulnerable cities in Italy (Boschi, 1995; Barberi et al., 2007, see Chapter 5).

Before the earthquake, the risk of mafia infiltration, especially in waste management, was already high in the Abruzzo region (Saviano, 2009; Galullo, 2009). During the national legal inquiry in 1992, Tangentopoli, the Abruzzo region was the first region to be investigated. By the time the inquiry had finished, the Abruzzo region had the highest number (300) of public managers and entrepreneurs under investigation, with 116 arrested for public administration crimes linked to tenders, frauds and bribes (Libera, 2010). These social risk factors characterizing the L’Aquila crater negatively contributed to the increasing of vulnerabilities and associated disaster risks, and became amplified by the negative impacts of the 6 April 2009 earthquake (see Chapter 5), and the recovery, reconstruction and re-development interventions carried out by the Italian state and the national and local civil protection authorities (see Chapter 6 and 7).

When the earthquake occurred, disturbance to the local social system was represented by the negative impacts of the disaster. Analyses of damage (Augenti and Parisi, 2010) and deaths (Alexander and Magni, 2013) from the disaster revealed poor design, poor-quality building materials, and shoddy workmanship. One of the major contributing factors was the inadequacy of the prevailing building codes, including how they have changed over time and the extent to which they were enforced. The (sadly not) surprising outcome was that the newer reinforced concrete frame (RCF) buildings accounted for 79% of deaths, with just 7 RCF buildings accounting for a quarter of all fatalities (Alexander and Magni, 2013).

After the earthquake, the affected area was politically called ‘the crater’ and encompassed the City of L’Aquila, and more than 80 villages in 57 municipalities in the surrounding rural and mountain area. However, many measures initially addressed to support local communities affected by the earthquake, such as those addressed to support local farmers and the primary sector, were distributed among the whole Abruzzo region thus scattering the financial benefits across the different areas of the region and among also those people who were not affected by the disaster. The same occurred with the derogations allowed by the State of Emergency, especially those concerning the suspension of ordinary rules regulating waste management and environmental, public health and water safeguard activities (see Chapter 7).

People found that they had to cope with the ongoing experience of the aftermath of the disaster and the recovery, reconstruction, and redevelopment efforts (see Chapter 3, 6 and 7). By living in rural and mountain territories and in disaster-prone areas, local people found that they also had to be able to cope with the disturbances that arose from past development and its associated social and environmental risks and impacts. These risks and impacts were similar to those characterizing many other significant areas of inland Italy (Barca et al., 2014), and other ‘less-favoured regions’, such as increasing marginalization through population decline, job cutbacks, land abandonment and degradation, reduction in public and private services, persistent social exclusion and degradation of cultural and natural heritage (see Chapter 3 and 4). All this was dramatically amplified by the earthquake and the second disaster created by post-disaster interventions.
Extrapolating from the L’Aquila case, it can be generally concluded that, before and after disasters, the geographical extent of the perceived and experienced risks and impacts contributes to demarcating the affected local landscape. The existence of likely local risks and impacts that characterise a local affected landscape leads people living in an affected place to feel that they share a ‘common fate’. An affected local landscape comprises multiple local communities of place (see Chapter 1) that become affected by the negative impacts of a long-term crisis or hazard. Among and within these multiple communities, past social and environmental changes and impacts associated with the history of development of these places, produce local inequities and social exclusion that contribute to the worsening of poverty, vulnerabilities and the exacerbation of local disaster risks and impacts. Being directly influenced by these negative social changes and trends (i.e. ‘the local root causes of disasters’ see Chapter 1), the intensity and extent of disaster risks and impacts are unequally distributed among members of a community of place and between communities in the same affected local landscape. Drawing on the hierarchy of levels of social resilience (Berkes and Ross, 2016, see Chapter 1, Figure 1.2), I consider that discourses about resilience (in terms of ‘resilience of what’) should be about the resilience of local communities of place (individuals, families, households, neighbourhoods) living in a local affected landscape (villages, cities, municipalities or network of municipalities) that can also encompass multiple regions or cross national boundaries (see Figure 10.1).

Figure 10.1: ‘Resilience of What’: Communities of place and affected landscape
Source: This Paper (based on Berkes and Ross, 2016)

Drawing from the L’Aquila case and the findings illustrated in Parts 1 and 2 of this PhD thesis and as discussed immediately above, it can be generally concluded that, before disasters, discourses about resilience in terms of ‘to what’ should consider the social dimensions comprising risks, not only the hazard per se. Therefore, resilience of what to what in times of crises is the resilience of the multiple communities of place that live within the same affected landscape to the hazard and to the local root causes of (disaster) risk creation (i.e. local pre-disaster vulnerability), which, in turn, are created by the history of past development processes and associated social vulnerabilities and risks (i.e. inequity, social exclusion, inequality and poverty, see Figure 10.2).
After disasters, ‘community resilience of what to what’ is the resilience of multiple communities of place within a common affected landscape to the negative impacts of disasters and to local vulnerability and the root causes of disasters (see Figure 9.4).
How does community resilience come into action?

In Chapter 1, I outlined that understanding the agency of local communities which enables local people to individually and collectively learn and transform during disturbances (i.e. crises, disasters, unwanted changes and any other planned intervention) means understanding the cognitive and interactional dimensions of this agency. As shown by the L’Aquila case, local people and communities, even the most vulnerable, do have individual and collective agency: they do play a crucial role to reduce (or worsen) (disaster) risks and impacts. In resilient communities, shared (intersubjective) intentionality emerges among people living in an environment of perceived and/or experienced crisis, and orients the human agency of resilient communities (i.e. social learning and transformation). In Chapter 9, drawing from the L’Aquila case (see Chapter 3 and 4), I defined social learning and transformation and described the changes in the cognitive and interactional dimensions implied by these processes.

Social learning implies changes in the perception of shared needs, desires, capacities, in the production of knowledge, beliefs and narratives, and in the individual and collective feelings, attitudes and behaviours. These changes lead both local communities and external actors towards developing a feeling of empathy and an attitude of social responsibility and caring towards local vulnerabilities, the most vulnerable and most affected. Transformation only derives from social learning and is the set of social and institutional processes that enable individuals and societies to change in cognitive and interactional ways in order to reduce local vulnerabilities, enhance wellbeing and capacities, and build resilience. The cognitive changes include changes in the knowledge, beliefs, values and myths, while the interactional changes are in the nested interactions people have with each other, and in the institutional arrangements to enable accountability and transparency, inclusiveness and fairness, justice and deliberativeness, all of which are social issues which are intrinsically associated with social learning and transformation in societies. Social learning and societal transformation can be activated in each of the eight dimensions of local community wellbeing (see Chapter 9) and are essential components of resilience at all levels of society (Kelman et al., 2016; Sharpe, 2016; Imperiale and Vanclay, 2016b; Berkes and Ross, 2016; Matarrita-Cascante et al., 2017; Cavaye and Ross, 2019).

The cognitive dimension of community resilience in action

As discussed above, social learning orients changes in people’s individual and collective feelings, attitudes, and in the perception of needs, desires and capacities. But how do these changes occur in resilient communities? What are the changes in the cognitive dimension of human agency needed if a community aims to be resilient, learn and transform? As the L’Aquila case shows, and as discussed above, both before and after disasters, by living in an environment at risk, or within a common affected landscape, local people experience changes in the perception of their needs to reduce local vulnerabilities, and in their feelings towards the most vulnerable and those most in danger. They learn over time how their vulnerabilities play a crucial role in worsening the likelihood, extent and intensity of disasters, and how disaster risks and impacts threaten their wellbeing, especially of the most vulnerable.

Overall, it can be generally concluded that, in times of crises and disasters, social learning occurs through a change in the perception and experience of individual and collective needs and feelings, which leads to empathy and social responsibility towards the most vulnerable and towards reducing local vulnerabilities, and through the production of a shared knowledge, which reinforces local people’s sense of community, sense of place, sense of risk, and local people’s perception of shared needs, desires and capacities to reduce vulnerabilities and associated disaster risks and impacts. All this represents the cognitive components and processes constituting the intentionality of human actions in a resilient community. Such an intentionality, constituted by these cognitive components and processes, orients local people’s actions, interactions, and
behaviours towards socially sustainable transformation for reducing local vulnerabilities and associated disaster risks and impacts and building the resilience of the whole community (Figure 10.4).

![Figure 10.4: The cognitive dimension of human agency in resilient communities](image)

Source: This Paper

The interactional dimension of community resilience in action

As described in Chapter 3 and discussed above, in the L’Aquila crater we observed that these cognitive components (see Figure 10.4) were triggered and reinforced through mutual aid and cooperative actions among members of a community. No longer having a place to live and being aware of the collective tragedy brought people to reflect on their overall community wellbeing, the immediate need to have a place to live (together), and the need for them to organize their social and community life to support, nourish and encourage each other. Post-disaster situations and other crises provide community members with opportunities to identify the problems they collectively have to address.

Rather than any counter-productive action or anti-social behaviour, we observed that the shared need to find solutions to common problems brought about positive, cooperative behaviour. Mutual aid and social inclusion (equity, participation, social cohesion) represents the interactional dimension of local community resilience which enables all members of a community, including the most vulnerable, to learn, transform and be part of the recovery activities.
This represents the way in which people in resilient communities collectively interact with where they live, and with whom they live, making the needs of the most vulnerable as their shared priority, and putting local wellbeing, vulnerabilities, and capacities at the core of their collective actions to reduce local disaster risks and impacts.

From a social-ecological systems perspective, the human agency in resilient systems is the complex set of nested interactions within a social unit and across multiple levels of social organization and different temporal and spatial scales that enact, enable, and empower social learning and transformation for improved SES management and resilience at all levels of society. Enriching the hierarchy of levels described by Berkes and Ross (2016) with the conceptual advances in system and evolutionary biology (Bailly and Longo, 2003; Longo and Montevil, 2011, see Chapter 1, Figure 1.4), below I suggest a model that may help better conceptualise social resilience (i.e. social learning and transformation at multiple levels of social organization). In Figure 10.5, the complex set of nested and inter-subjective interactions that enact, enable, and empower resilience (social learning and transformation) at all levels of society are conceptualised.

Enlarging our analytical lens on the specific structural dynamics at the local community level among members of a resilient community, and drawing from the L’Aquila case and the findings in Parts 1 and 2, I define mutual aid and social inclusion (equity, participation, social cohesion) as being the horizontal interactions, upwards integrations and downwards regulations that enable the process of resilience at the local community level, and at other levels of society. The horizontal interactions enable mutual aid and mutual learning among members of a resilient community (i.e. mutual aid and cooperation); the upwards integrations enable each member to participate to the vision and collective actions of transformation (i.e. social inclusion); while the downwards regulations represent the way through which the community vision and the specific collective actions and transformations implemented strengthen mutual aid and cooperation (by strengthening the horizontal interactions), social inclusion (by strengthening the upwards integrations), ultimately enhancing equity and providing benefits for everyone, thus ensuring the social survival of the whole community (i.e. social sustainability) (see Figure 10.6)

![Figure 10.5: The process of social resilience](source: This Paper)
Expanding our understanding of the process of community resilience to encompass also the ecological and cognitive (i.e. cultural) dimensions through which resilience comes into action at the local community level, in Figure 10.7 I represent the three dimensions of community resilience and how it comes into action at the local community level, building an aftershock economy through equitable management of local resources (i.e. ecological interactions), an aftershock society through mutual aid and social inclusion (i.e. social interactions), and an aftershock communication, through the building of a culture of resilience (i.e. cognitive interactions) all of which contribute to building resilience at the local community level.

As discussed in Chapter 1, the Panarchy model does not provide adequate detail to identify and conceptualise the complex structure of nested inter-subjective and inter-level cognitive and social interactions, institutional arrangements and power geometries within and across multiple levels of social organization and different temporal, spatial and cultural scales that constitute the way through which the agency of social resilience is structured, which enables social learning and transformation and build resilience at all multiple levels of society.
SES theory still says little about the kind of individual and collective intentionality behind the complex set of nested inter-subjective and inter-level interactions that enact, enable and strengthen social learning and transformation and build resilience as a process at all levels of society. The cognitive and interactional dimensions of human agency in resilient social-ecological systems is little conceptualised: how power geometries influence social system’s outcomes in terms of resilience, and which methodology can enhance social learning and transformation and strengthen resilience in practice at all levels of society is still under-theorised (Berkes and Ross, 2013). Figures 9.11 and 9.12 show the epistemological tools proposed and how they are intended to advance the conceptualisation of previous understanding of social and community resilience in social-ecological systems at multiple levels of organization and at cognitive, interactional and ecological levels.

**Figure 10.8: Moving forward, part 1: Understanding the process of social resilience**
*Source: This Paper*

**Figure 10.9: Moving forward, part 2: Understanding the process of community resilience**
*Source: This Paper*
What are counterproductive actions and how can they be avoided?

Understanding how resilience occurs at the local community level in times of crises and disasters (i.e. Community resilience of what to what? How does community resilience come into action?) is crucial for larger social systems if they are to build resilience at all levels of society (i.e. social resilience). Understanding how external actors are ‘sensitive to’ and learn from the agency of local community resilience, and how they change or transform accordingly, is necessary to achieve a full understanding of social resilience in its whole (see Chapter 1). The term ‘social resilience’ refers to the general ability of human systems to mitigate the impacts of unexpected changes, learn, and transform at all levels of society and across different temporal and spatial scales, building the resilience of the whole social system to future disturbances while acknowledging the multiple dimensions of development (e.g. bio-physical, sociocultural and economic, see Matarrita-Cascante et al., 2017). Consequently, the term ‘community resilience’ can be considered as a subfield of social resilience, and refers to the specific ability of smaller social sub-systems (i.e. families, households, neighbourhoods, and local communities) to cope with these impacts at the local level (e.g. disasters or deep crisis) (Adger, 2000; Adger et al., 2005; Folke, 2006; Matarrita-Cascante et al., 2017, see Chapter 1).

Within local communities however, there can be resilience, as well as counter-productive actions, such as elite capture, rent-seeking, infiltration of organized crime, disaster capitalism, and corruption (see Chapter 7 and 8). Counterproductive actions arise within local communities from local history of development and associated social changes and impacts and are embedded in the way disaster management and development interventions are carried out (see Chapter 5, 6, 7 and 8). The way disaster management and development interventions are conceived, decided, designed, and implemented can facilitate both negative and positive trends in local communities. Unless properly managed, planned interventions can lead to a worsening of local social risks, including rent-seeking, elite capture, disaster capitalism, organised crime infiltration, corruption, inequity and social exclusion, thus exacerbating local vulnerabilities, the lack of capacity, hazard exposure and associated disaster risks and impacts (see Chapter 7 and 8). Conversely, planned interventions can lead to: enabling positive individual and collective feelings, attitudes, actions and behaviours; enhancing empathy, caring, mutual aid, equity and social inclusion; strengthening social responsibility, local knowledge, sense of community, sense of place, sense of risk, and local people’s awareness of shared needs, desires and capacities. All this enable social learning and transformation and the building of local community resilience (see Chapter 4).

Understanding how to build resilience at all levels of society, therefore, requires understanding not only community resilience of what to what, or how community resilience comes into action, but also the role of local communities and how to recognise and strengthen it in any planned intervention, before and after disasters. Understanding how desired social development outcomes (i.e. resilience to what ends?) are included in, and enhanced in any planned interventions, and how issues of justice and fairness (i.e. resilience for whom?) are considered at multiple levels of social organization, is crucial to recognise and strengthen the role local communities have in learning and transforming to better reduce local vulnerabilities, risks and the root causes of disasters, enhance DRR, and build resilience.
Resilience to what ends?

Being the process of social learning and transformation at the local community level in times of crises and disasters, community resilience emerges among members of resilient communities to orient their individual and collective intentionality, actions, and behaviours towards desirable shared outcomes for the whole community. Drawing from the L’Aquila case and the findings presented in Parts 1 and 2 and discussed above, we conclude that both before and after disasters, these desirable outcomes primarily relate to the mitigation of local vulnerabilities and associated risks and impacts affecting especially the most vulnerable, and towards the survival and social sustainability of the local community in its whole. Reflecting on our stories, it was evident that at the cognitive level, the desirable outcomes created by having greater community resilience were enhanced empathy, caring, and social responsibility towards local vulnerabilities and the most vulnerable. At the interactional level the community resilience outcomes created reflected the four key issues considered by the literature as policy goals for social sustainability and socially sustainable transformation (Murphy, 2012; see Chapter 3 and 4), meaning the survival and prosperity of the affected local community of place – especially of the most vulnerable (see Chapter 3) – and of the common affected landscape – especially of the commons (see Chapter 4).

From our field observations and action research in L’Aquila, it was evident that these 4 key issues, such as equity, public awareness of sustainability, participation and social cohesion, were embedded in the interactional dimension (i.e. mutual aid and social inclusion) of social learning and transformation through which local community resilience came into action. These features were supported at the cognitive level spontaneously arose both as principles and means which oriented and enabled individual and collective learning and transformation towards reducing local vulnerabilities and taking care of the most vulnerable, and as outcomes of the actions of people in resilient communities, during the local community recovery activities. Drawing from Chapter 3 and 4 we provide a description of these 4 key principles, means, and intended outcomes which oriented individual and collective actions in resilient communities analysed by this PhD research.

Participation (social inclusion)

As reported in Chapters 3 and 4 and discussed above, within the resilient communities analysed there was a widespread will to participate and share in the work that needed to be done in the camps, with many people making considerable contributions to initial relief operations and to how life in the camps was organized. People shared their thoughts and ideas, and came to collective solutions which they implemented together. People in the camps implemented a caring environment where participation and inclusion were valued and taken as serious components of disaster emergency management and post-disaster survival (see Chapter 3). Crucial for understanding how community resilience came into action in resilient local communities, was to appreciate that vulnerable people within resilient communities, not only were the primary beneficiaries of the community-based actions carried out, but they were engaged within local community activities, playing a pro-active role in every community initiative (see Chapter 3, Figures 3.1-3.4). In the context of the rural development project (see Chapter 4), community participation and engagement was crucial to build community resilience. Through this process, participants, individually and collectively, learned about they had common problems, developed a shared vision, and agreed on shared solutions and intended outcomes. Crucial for understanding how community resilience came into action in resilient local communities was to appreciate that local people do develop empathy, caring and social responsibility also for their affected landscapes, not only for the most vulnerable. They do have capacities to develop shared strategies and cooperate to reduce local vulnerabilities, risks, and impacts, especially affecting their commons (see Chapter 4, Figure 4.4).
Equity (i.e. mutual aid and cooperation)

As reported in Chapters 3 and 4 and discussed above, after the 6 April 2009 earthquake, local people in the L’Aquila crater selflessly shared whatever resources they had. They shared what they had in their own pantries, shopkeepers shared their stocks, and village café owners provided food for free to anyone who needed it. Spontaneous networks of solidarity were created distributing first aid supplies and useful equipment according to the needs of each group. There was no place for, or point in, surplus accumulation or hoarding – people shared generously and equitably, knowing that each person’s survival (including their own) depended on this sharing. Rather than any counter-productive action or anti-social behaviour, we observed that the shared need to find solutions to common problems brought about positive, cooperative behaviour (see Chapter 3, Figure 3.2 and 3.6). Mutual aid and social inclusion (equity, participation, social cohesion) represented the interactional dimension of local community resilience, which enabled all members of these communities, including the most vulnerable, to learn, transform and be part of the recovery activities addressed to reduce local vulnerabilities, risks and impacts which local people perceived as being common problems they had to address all together (see Chapter 3, Figures 3.1-3.6).

In the context of the rural development project (see Chapter 4), equity was the principle through which local actors were engaged, and the network agreement was conceived and designed. Equity was also established within the same contract as being one of the intended principles and social development outcomes local actors signing the contract agreed to respect in regulating their collective actions, and to achieve for the enhancement of the wellbeing of all members of the network agreement. All this built trust among all members of the contract, enhanced mutual aid and cooperation among them, leading to positive social learning and transformation processes towards developing shared strategies to build back better their common landscape (see Chapter 4, Figure 4.4.).

Public awareness of sustainability (i.e. DRR, resilience and social sustainability)

As reported in Chapter 3, 4 and 5 and discussed above, people were able to identify disaster risks and impacts as common problems that required shared solutions. Before the disaster, they were able to learn about the local vulnerabilities they had to reduce from the disaster risks they were perceiving (see Chapter 5). After the disaster, they were able to learn from the disaster impacts and recognise the most vulnerable and those most affected within their communities. They learned how to consider their needs as common problems that required shared solutions. They learned to consider more disaster risks and impacts; the risks and impacts that could have been created by their recovery actions; and how these activities could have brought benefits and enhanced the wellbeing of everyone within their communities, especially of the most vulnerable (see Chapter 3, Figures 3.1-3.6).

In the context of the rural development project (see Chapter 4), public awareness of sustainability emerged among participants and was built as the individual and collective processes of social learning from: (i) understanding past-development processes and failures and associated social change, impacts and vulnerabilities which arose throughout the years; (ii) recognising that individual complains had a common pattern and needed the design of shared solutions, and that the capacities of each of the member were of benefit for everyone; (iii) participating in the building of a shared vision about the local vulnerabilities, risks, impacts and root causes of disasters to reduce, the mitigation strategies to adopt, how to monitor them and the sustainable development of the multiple dimensions of their wellbeing to implement. In this process, community mapping and community visioning increased local public awareness (see Chapter 4).
Social cohesion (community wellbeing)

As reported in Chapter 3 and 4 and discussed above, local people in the resilient communities we analysed, created a social environment of purposefulness, cooperation, naturalness, candour, and Joyfulness in planning shared solutions for the overall community wellbeing. People learned to tolerate each other and to respect each other. They also learned how to consider local community wellbeing, how to reduce the vulnerabilities, risks and impacts that were threatening the multiple dimensions of their wellbeing, especially of the most vulnerable. They shared stories and strategies through all forms of media and in person, and, in the process, they strengthened their sense of place, sense of community, sense of risk, their sense of public duty and social responsibility, and increased their awareness of the social risks and the vulnerabilities, risks and impacts they had to face. Through these narratives and the sense of community, sense of place and sense of risk they developed, they strengthened their capacity to perceive that they had shared needs, desires, and capacities to reduce the local vulnerabilities, risks and impacts that were threatening the local community wellbeing. By doing so, they could recognise common problems and implement shared solutions to address them, building a community vision that led to strengthen social cohesion around shared strategies to enhance local community wellbeing (see Chapter 3, Figures 3.5, 3.6).

In the context of the rural development project (see Chapter 4), social cohesion emerged around a shared vision for the sustainable development of the common landscape, and of the multiple dimensions of local community wellbeing. It was strengthened through organising participatory field visits, public meetings, cultural events which led to identify potential ways to mitigate collectively the problems and needs threatening local community wellbeing. It also contributed to increase local awareness of the local natural and cultural heritage and the commons, and to build local capacities, cooperation and trust and a shared vision for the future development of the multiple dimensions of local community wellbeing, and a more sustainable use of local resources (see Chapter 4, Figures 4.4).

Issues of justice and fairness (Resilience for whom?)

Community resilience, as being the process of social learning and transformation in societies, leads to better outcomes for everyone. It comes into action through the cooperative behaviour of individuals, mutual aid and cooperation, bringing benefits to all people. As described in Chapter 3, an immediate concern was for the children, the elderly and other vulnerable people. Very quickly, an aftershock economy developed, not based on narrow self-interest or capitalistic accumulation, but on enlightened self-interest and collective wellbeing. The most vulnerable not only were the primary beneficiaries of the community-based actions carried out, but they were engaged within local community activities, playing a pro-active role in every community initiative (see Chapter 3). However, communities, especially the larger towns and cities, also include local elites who can often be extremely resilient in perpetuating ‘business as usual’, including in post-disaster places.

As stated above, within local communities there can be resilience, as well as counter-productive actions, such as elite capture, rent-seeking, infiltration of organized crime, disaster capitalism, and corruption (see Chapter 7 and 8). Unless properly managed, planned interventions can lead to a worsening of these local social risks that increase inequity, and social exclusion, thus exacerbating local vulnerabilities, the lack of capacity, hazard exposure and associated disaster risks and impacts (see Chapter 7 and 8). Conversely, planned interventions can lead to: enabling positive individual and collective feelings, attitudes, actions, and behaviours; enhancing empathy, caring, mutual aid, equity, and social inclusion; strengthening social responsibility, local knowledge, sense of community, sense of place, sense of risk, and local people’s awareness of
shared needs, desires, and capacities. All this enable social learning and transformation and the building of local community resilience. Good governance, policing and vigilance are necessary, not so much to stop the very rare situations of looting by individuals, but rather to control the massive exploitation wrought by corrupted leaders and unethical large firms. Resilience is about enhancing the wellbeing of all people, especially the worse-off members of society – it is not about protecting the financial interests of the rich and powerful. As the L’Aquila case shows, too often external interventions get captured by the private interests of national and local elites, and are accompanied by a top-down mechanism that implies the promulgation of disaster myths and prejudices, the use of emergency powers and procedures, the adoption of a command-and-control approach and the implementation of top-down planning through the production of a scientific knowledge which is only techno scientific and it is not co-produced with local communities, nor transformative. Such external interventions produce structural failures (see Chapter 8) and become second disasters (see Chapter 5, 6, 7 and 8).

Drawing from the findings and empirical evidence provided in Parts 1 and 2 and discussed above, it can be generally concluded that discourses about resilience in society must consider issues of justice and fairness in terms of assessing external interventions and the extent to which, before and after disasters:

(i) they consider the role of local communities, their feelings, attitudes, knowledge, beliefs, values, narratives, perceived local vulnerabilities and associated individual and collective needs, priorities, desires and capacities, sense of community, sense of place, sense of risk, collective actions, and behaviours;

(ii) they consider social sustainability (i.e. social inclusion, equity, DRR and resilience, and community wellbeing) as being the principle, mean and outcome that orient the institutional and financial strategies and the physical planning, risk management and community participation approaches of any disaster management and development intervention;

(iii) they prevent elite capture, rent-seeking, disaster capitalism, organised crime infiltration, corruption and other associated social risks (e.g. inequity and social exclusion) from arising and getting exacerbated both at the local community level and at other levels of society.

The cognitive and interactional dimensions of resilience at the local community level must be carefully recognised, engaged, and empowered through developing adequate institutional and financial arrangements. The local vulnerabilities, risks, and impacts threatening the multiple dimensions of local community wellbeing must be carefully understood, recognised, and reduced together with local communities. Adequate management and planning models should be designed and implemented to prevent elite capture, rent-seeking, disaster capitalism, organised crime infiltration and corruption, and other associated social risks from arising both at the local community level and at other levels of society. All this must lead to enhancing inclusive social learning and sustainable transformations and the building of resilience and of a glocal culture of resilience at all levels of society, which would enable societies achieve the SDGs and meet the 2030 Agenda (see Chapter 9). Such glocal culture of resilience should enhance the positive individual and collective feelings and attitudes of empathy, caring and social responsibility towards local vulnerabilities and the most vulnerable, and towards reducing the root causes of disasters, and building resilience at all levels of society.
How can Social Impact Assessment enhance community resilience?

Answering the question, *how can SIA enhance community resilience?* means understanding how SIA can improve social development outcomes of any planned intervention, enabling and strengthening inclusive social learning and socially sustainable transformations, and building resilience at the local community level and other levels of society.

A set of cognitive processes compose the understanding and recognising phases, including co-producing together with local communities an understanding of: (i) the multiple dimensions of local community wellbeing, including their social-ecological landscape; (ii) the positive and negative trends within local communities and within each of the multiple dimensions of their wellbeing; (iii) the local history of past local development processes; (iv) the associated social changes and impacts created; (v) the vulnerabilities, social risks and root causes of disasters that arose from such processes at the local level; (vi) the associated local people’s perceptions, needs, priorities, desires and capacities to reduce them and enhance local community wellbeing. This co-produced understanding better orients the processes of community engagement and empowerment towards engaging and strengthening local capacities, while preventing any planned intervention from reproducing or even exacerbating local vulnerabilities and social risks. All this is crucial to enhance social learning and socially sustainable transformations and build resilience at the local community level and other levels of society.

The understanding and recognising phases include the process of understanding the local vulnerabilities, risks and impacts created, or that may be created by crises, disasters, unwanted changes, or any planned intervention. They also include the analyses of the distribution among the local population of these (likely) risks and impacts and the associated community needs to reduce them, giving specific attention to the most vulnerable within a community, and to the most vulnerable sectors and/or components of local community wellbeing. To better orient the subsequent processes of community engagement and empowerment, the understanding and recognising phases must encompass the positive and negative trends within local communities, meaning: (i) the social risks and the root causes of disasters (e.g. local inequity, social exclusion and vulnerability production processes); and (ii) the cognitive and interactional capacities that enable local communities to develop positive individual and collective actions and behaviours oriented towards reducing these negative trends, and enhancing local community wellbeing. This means recognising local people’s perceptions about not only the needs they have, but also the desires, knowledges, capacities they have to learn and transform individually and collectively, towards achieving desired outcomes.

To enable the process of social learning and transformation, the understanding and recognising phases must be co-produced with local communities and transformative, thus enhancing local public awareness about local vulnerabilities, risks and impacts, the strategies needed to reduce them, and the shared desired social development outcomes to achieve in any planned intervention, before and after disasters. The understanding and recognising phases should lead to genuine community engagement processes in which the cognitive and interactional dimensions of local communities are enabled and fully included within the design of the mitigation and enhancement strategies that will accompany any planned intervention. The engaging phase is effective when, together with the understanding, recognising and empowering phases, it promotes positive collective feelings such as empathy, solidarity, social responsibility, a sense of caring and public duty towards reducing local vulnerabilities, risks and impacts, sense of community, sense of place, sense of risk. In resilient communities, these feelings and attitudes constitute the cognitive dimension through which local community resilience comes into action, and motivate people to work together towards addressing common problems and finding shared solutions (see above and Chapter 3).
The “engaging” phase helps strengthen these feelings through publicly discussing individual concerns registered during the recognising phase, and strengthen local people’s capacities and positive individual and collective actions and behaviours towards building socially sustainable transformations at the local level. This process helps local communities to progress from the mere collection of individual complaints, and/or isolated individual and collective activities, into a community vision about common problems, common potentialities, and shared solutions. The engaging phase also helps build a social environment of cooperation and mutual aid around these issues that constitute the interactional dimension through which local community resilience comes into action (see above and Chapter 3). Overall, the engaging phase helps strengthen the social feelings, attitudes, and interactions that underlie community resilience. It contributes to build a glocal culture of resilience and assist local communities in identifying the shared measures they need to implement to mitigate negative social impacts, enhance community wellbeing and capacities, and better achieve the desired social development outcomes likely to derive from any planned intervention.

Building resilience at the local community level, however, requires much more than co-producing transformative understanding of the local social context, or recognising local community needs, desires, capacities, and knowledge, and engaging them around building a common vision for implementing shared mitigation and enhancement strategies. Building community resilience also means that the community vision that emerges from the understanding, recognising, and engaging phases, and from the capacity of local communities to learn and transform, must find legitimacy and be empowered by adequate institutional and financial strategies. These strategies should recognise the role local communities have in orienting any planned intervention towards desired social development outcomes.

The empowering phase places (or aims to place) the conception, decision, design and implementation of disaster management and development strategies and associated SIA mitigation, monitoring and enhancement programs and tools in the hands of local communities. It is oriented to strengthen their collective sense of social responsibility and commitment to achieve desired social development outcomes. It is addressed to ensure the social sustainability of planned interventions, providing effective tools to reduce social risks, including rent-seeking, elite capture, organized crime infiltration, disaster capitalism, corruption, inequity and social exclusion. It also helps establish collective agreements to create legitimacy, build deliberative spaces and facilitate deliberativeness to enhance social development around the community vision developed in the previous phases.

The development of community agreements and Impacts and Benefits agreements around shared Social Impact Management Plans (Franks and Vanclay 2013) can offer an approach to sustainable development by “balancing the costs of projects with desired community benefits; incorporating local knowledge and concerns; feeding back and responding to information about ongoing impacts; defining the local community’s economic participation in the development; and securing the significance continuing involvement of communities in determining their futures relative to the development process” (Nish and Bice, 2011, p.59). Too often, such agreements, however, primarily focus on ‘mitigation’ strategies with planned intervention being already decided beforehand (Franks and Vanclay, 2013). As shown in Chapter 4, these practices must be enhanced and included within broader community-led local action plans that should orient any disaster management and development intervention in the affected landscape, before and after disasters.
Such local action plans should include considerations concerning how to orient the conception, decision, design and implementation of disaster management and development so that they can include consideration of how to:

1. recognise and address local community needs and priorities;
2. understand and reduce local risks and impacts deriving from current crises and past or ongoing, long term or sudden disasters;
3. achieve desired social development outcomes in any planned intervention;
4. reduce endemic vulnerabilities, risks and the root causes of disasters affecting especially the most vulnerable and the commons;
5. build a shared vision for the sustainable development of the multiple dimensions of local people’s wellbeing, including their socio-ecological landscapes;
6. enhance DRR, community wellbeing and capacities;
7. develop effective participatory mitigation and monitoring strategies;
8. engage and strengthen local knowledges and capacities, including social learning and transformation;
9. empower socially sustainable transformations and build resilience at the local community level and other levels of society.

To be as inclusive as possible, these agreements must be established among local entrepreneurs, as well as between local entrepreneurs and local municipalities, NGOs, the academia, and science foundations. The “empowering” phase helps the state, disaster management, development agencies and a broader constituency of local communities to co-conceive, co-decide, co-design and co-implement disaster management and development interventions and associated mitigation and monitoring strategies, enabling inclusive learning and transformation, and providing tools to collectively evaluate the social sustainability of any disaster management and development action.

Drawing from the 26 tasks detailed in the SIA model (Vanclay et al., 2015), the SIA Framework for Action (see Figure 9.20) was developed during action research on the Tratturo Magno project and in the L’Aquila post-disaster reconstruction process conducted within the context of the research underpinning this PhD (see Chapter 4). The proposed SIA Framework for Action is a set of actions that social practitioners can implement together with local communities to help external actors and local communities achieve social development outcomes in sustainable regional development projects, through enhanced understanding and better management of the social issues associated with inclusive social learning, socially sustainable transformations and building community resilience.

As shown in Chapter 4, use of the SIA Framework helps in co-designing ‘transformations towards sustainability’ (Future Earth 2014), and specifically in enhancing outcomes through building community resilience and empowering local communities and their capacities to learn and transform. The Framework’s 4 phases imply recursive, mutual and transformative learning the SIA practitioners must build among them, the affected local communities and the external actors (i.e. decision-makers, investors and proponents). Due to their overlapping, socially defined and non-linear nature, the phases of the SIA Framework for Action are better understood as processes influencing and strengthening each other through an always increasing knowledge of the local vulnerabilities, risks and associated social impacts to reduce, and of the local capacities, knowledge and resilience to strengthen at the local community level and other levels of society.
This model turns SIA into a process addressed to co-produce transformative knowledge with affected local communities, enhance social learning and transformation, and build resilience at the local community level and at other levels of society in any planned intervention, before and after disasters.

Overall, to reverse the negative trends affecting vulnerable regions (see Chapter 4), it is crucial to build community resilience by collectively understanding and evaluating transformations towards sustainability, identifying and promoting sustainable behaviour, and transforming development pathways (Future Earth 2014). In this PhD thesis, I demonstrated the potential of the SIA Framework for Action to promote sustainable development and community resilience (see Chapter 4). At all points along the project cycle, SIA can promote constructive dialogue and collective deliberation through which researchers and community stakeholders can coproduce knowledge about what is locally needed in the present and for the future. This cooperative discourse can encourage decision-makers and project managers to codesign, with residents, shared strategies for the sustainable development of their social-ecological landscapes and for the mitigation of the negative impacts and the achievement of desired social development outcomes.

Exploring “effective methodologies of social impact assessment to better understand the role local communities can play in reversing negative trends”, and evaluating “social platforms for sustainable models and value generation in order to encourage the proactive role of communities in natural and cultural heritage management, promote territorial and social cohesion for more ‘inclusive growth,’ and strengthen community resilience through strategic development” are now considered key research activities needed to build sustainable socio-ecological systems within mountain regions (Drexler et al., 2016: 39).
All this can apply everywhere, inspiring the design and implementation of any planned intervention towards building resilience at all levels of society and achieving social sustainability and the SDGs. The SIA community, however, must work harder to establish the relevance and effectiveness of SIA on the European and world stages to contribute to sustainable development and achieve the SDGs. The SIA Framework for Action helps local communities, social practitioners, project managers, development agencies, and decision-makers to better understand and conceptualize the actions needed to enhance social development outcomes, such as enhanced local community resilience. It helps rural and mountain development policies, plans, programs, and projects take a community-oriented approach to disaster management and development planning and project implementation.

The 2030 Agenda, together with the Addis Ababa Action Agenda, the Paris Agreement on Climate Change, the New Urban Agenda, and the Sendai Framework for Disaster Risk Reduction 2015-2030, together with the aforementioned international policies for social development outcomes in vulnerable regions are a solid base for the formulation of national and local DRR and resilience strategies (UNECOSOC, 2018). Crucial for the future of SIA theory and practice would be understanding how SIA and, specifically, the proposed SIA Framework for Action can enhance DRR and community resilience and contribute to building resilience at all levels of society during any disaster management and development policy, plan, program, and project before and after disasters. This would contribute to make SIA an effective process to support disaster management and development practice to align their efforts towards achieving the SDGs and meet the 2030 Agenda, before, during and after crises, disasters, unwanted changes, and any other disturbance that affect the multiple dimensions of community wellbeing.

Further efforts, however, must be made in order to understand the main constraints to build resilience at all levels of society in current disaster management and development practice. Below, I discuss the main findings and empirical evidence reported in Part 2 about the structural failures of the disaster management (i.e. disaster prevention, preparedness and short-term/mid-term recovery) and development (i.e. initial reconstruction) activities carried out before and after the 6 April 2009 earthquake. I conceptualise these structural failures both at the cognitive (i.e. counterproductive learning) and interactional levels (i.e. counterproductive transformation), and subsequently reflect on what can be learned from all this, and on what needs to be transformed in the fields of disaster management, development and impact assessment to fully integrate in their practices the SIA Framework for Action and better meet the 2030 Agenda.
What are the main constraints that undermine building resilience?

Drawing on the findings presented in Part 2, I consider that the main constraints that undermine building resilience at all levels of society are both: (1) the command-and-control approach to resources (e.g. financial resources, natural resources, the built environment and associated land use, environmental, social protection and planning approaches) that is adopted by external and local authorities; and (2) the negative trends within affected local communities.

We define a ‘structural failure’ as being the cognitive and interactional disability of external actors and organizations to understand, recognise, engage and empower the main local drivers of social learning and transformation at the local level (i.e. community resilience), something that, in times of crises and disasters, leads external actors to provide ‘counterproductive help’ (Illich, 1976, 1978; Esman and Uphoff, 1984; Ellerman, 2006). Such counterproductive help creates community-level dependency on external support (i.e. counterproductive learning), worsens social risks (e.g. rent-seeking, elite capture, organised crime infiltration, disaster capitalism, corruption, inequity and social exclusion) and pre-disaster vulnerability within affected local communities, and exacerbates local disaster risks and impacts (i.e. counterproductive transformation). At the cognitive level, such structural failures are induced and recursively reinforced by the production of a scientific knowledge concerning disaster risks and impacts which is only techno-scientific (see Chapter 5, 7 and 8), and by the promulgation of a set of beliefs, values and disaster myths. At the interactional level, they are reinforced by strict and bureaucratic institutional arrangements (i.e. emergency powers and procedures), military-type, top-down management and planning models (i.e. command-and-control and top-down planning, see Chapter 5, 6 and 7 and 8), all of which still inform and accompany the conception, decision, design and implementation of disaster management, development, and social protection interventions in contexts of crises and disasters.

Counter-productive actions that undermine resilience to emerge and be built at the local community level and at other levels of society, however, do not occur only ‘outside’ the affected local community of place, or the affected local landscape. Too often, naïve victimization of the place hit by a crisis or a disaster leads to an underestimation of the counter-productive actions that do occur also at the local level within the same community of place or the affected local landscape both at the cognitive and interactional levels (see Chapter 2). This leads to underestimating inequity, social exclusion, vulnerability, and risk creation processes at the local level. Within local communities there are positive and negative social processes and trends: there can be resilience (see Chapter 3 and 5), but there can also be the space for elite capture, rent-seeking, organised crime infiltration, disaster capitalism and corruption, even within the same local communities (see Chapter 7). The way disaster management and development interventions are carried out can facilitate both negative and positive trends in local communities (see Chapters 8 and 9).

The L’Aquila case and the failures at the cognitive level

In the L’Aquila case, counter-productive actions were implemented at the cognitive level through the playing-out of disaster myths, which was highly evident in the mainstream media and in the way the DCP conducted its operations (see Chapter 6). Before the disaster, the assumption that local people had to be reassured to exercise public control was grounded on the typical disaster myths and prejudices towards local communities. These myths led external and local actors to consider vulnerable local people inclined to panic or to collective hysteria or unjustified alarmism, and unable to take meaningful individual and collective actions. After the disaster, the DCP clearly held onto the disaster myths, acted as if they were real, promulgated them in order to justify its interventions, and manipulatively used them in order to advance disaster capitalism and
organised crime infiltration at national and local levels. The jackals alert created a climate of fear and suspicion, rather than empathy (see Chapter 6). The local population was framed as shocked and unable to cope, which led to over-assistance and paternalism creating rent-seeking and elite capture opportunities, and a gold rush, rather than promulgating caring and social responsibility for reducing local vulnerabilities and towards the most vulnerable (see Chapter 6).

The State Funeral and other commemorative rites (e.g. those in front of the student dormitory where 8 students died) were seized upon as opportunities to be orchestrated for mediatization and the outpouring of feigned grief (see Chapter 6). They were hijacked to build the approval of the commander-in-charge, rather than to build trust and cohesion in the community. The DCP paraded their interventions with extensive propaganda, leading to the divinization of the DCP chief, and to building uncritical consent for its disaster management plan. The idea that people had nothing to contribute because recovery and initial reconstruction operations were perceived as being just technical, facilitated inequity and social exclusion rather than mutual aid, cooperation, or social inclusion. All this undermined the capacities of local communities to learn individually and collectively from disaster risks and impacts, and transform towards better reducing local vulnerabilities and the root causes of disasters, and enhancing local community wellbeing and resilience.

Furthermore, both before and after the earthquake, the knowledge concerning disaster risks and impacts was considered as just being techno-scientific advice to serve national and civil protection authorities, rather than as being transformative and co-produced with local communities to serve public purposes, such as enhancing DRR and resilience at the local community level. Both before and after the earthquake, the top-down, strict, military type command-and-control approach to disaster risk and impacts, decision-making and financial resources for mitigation and monitoring activities turned national and local authorities into civil protection authorities. Through such an institutional mechanism embedded in the national civil protection system, vulnerabilities, risks, and impacts-reduction activities were considered as being the responsibility of only (or primarily of) national and local authorities. As before the earthquake, the knowledge production process about local vulnerabilities, risks and impacts that accompanied disaster management interventions after the earthquake was intended to be a techno-scientific advice to serve the interests of civil protection authorities, rather than being co-produced with the local affected neighbourhoods and a broader constituency of society or transformative and oriented towards enhancing social learning and build community resilience (see Chapters 6, 7 and 8).

Before the earthquake, such knowledge was not informed by any analysis concerning local vulnerabilities affecting local communities’ wellbeing and negatively influencing the local people’s perception and experience of disaster risks. Among the social risks taken into account before the earthquake, only collective anxiety, unjustified alarmism, or likely deviant behaviours were considered (see Chapter 5). Rather than building a co-produced and transformative knowledge through which enhancing inclusive learning and empowering socially sustainable transformations to enhance prevention and preparedness and build resilience at the local community level, the risk assessment served the civil protection interests. These interests were oriented to keep the command-and-control of the situation, and to “shut up any imbecile, calm down any conjectures, worries”, collective anxiety, or unjustified alarmism (see Chapter 5, p.122).

There wasn’t any analysis concerning the local capacity to learn and transform, including of local public officers and public health system, the municipal services, the local professional associations, building firms, NGOs, and other formal and informal groups and individuals that could have helped to better understand and identify local risks and vulnerabilities (see Chapter 5). The assessment and reduction of local vulnerabilities and social risks affecting the multiple
dimensions of local community wellbeing, and the enhancement of local preparedness and community resilience were considered irrelevant. Assessing only the likelihood of the hazard was considered enough to assess the multiple dimensions of disaster risks which, before the 6 April 2009 earthquake, were affecting the perceptions and experiences of local people, neighbourhoods and communities living in the L’Aquila crater (see Chapter 5).

Before the 6 April 2009 earthquake, the cognitive individual and collective capacities of local people to learn from the increasing of vulnerabilities and transform towards taking meaningful individual and collective actions to reduce, or to demand to reduce, local vulnerabilities and risks was ignored, excluded, and weakened. The focus of national and local civil protection authorities was only on the local police action, something that revealed that the main concern for them was alarmism rather than DRR and resilience, and indicates unease by these authorities (see Chapter 5). Rather than building a glocal culture of resilience and risk management, a culture of paternalism and reassurance (‘Rassicurazionismo’, see Ciccozzi, 2012, 2016; Alexander, 2014; Benadusi, 2016) was built. Through such a culture, ‘civil protection issues’ were actually matters of public control oriented to suppress concern in the community, subdue alarmism, and demonstrate institutional action rather than pursuing a public ethic and conduct to enhance local DRR and resilience at the local community level and other levels of society.

After the earthquake, post-disaster interventions were only considered the responsibility of the national and local authorities, which became civil protection authorities of the L’Aquila crater. The knowledge concerning local vulnerabilities and disaster impacts was considered as being techno-scientific knowledge only concerning the state of the built environment, rather than the multiple dimensions of community wellbeing. The only social risks addressed were looting and other deviant behaviours likely to occur among affected local communities. To address these social risks, which were consider a matter of public control, the city centres of the crater were evacuated, red zones were established, and an impressive number of military personnel and people in uniform or hi-vis clothing, as well as a large number of emergency, police, and military vehicles was deployed (see Chapter 6). All this further exacerbated the exclusion and marginalization of local homeowners and inhabitants from the reconstruction of their homes, neighbourhoods, villages, and city. There was nothing in the system to reduce, and/or avoid/prevent the risk of rent-seeking, elite capture, weak local governance, disaster capitalism, organised crime infiltration, inequity, social exclusion, gambling, placelessness, homelessness during disaster recovery, reconstruction, and development in the three years following the 6 April 2009 earthquake in which the State of Emergency was in force, and even beyond.

The command-and-control approach influenced the institutional and financial strategies, community participation, reconstruction/development, and risk management approach. It was accompanied by the deployment of an overwhelming military and para-military force, whose concept Alexander (2010) considered was similar to the one deployed to subdue Saddam Hussein in Iraq during the Allied invasion of 2003. The approach was accompanied by disaster myths. These myths led decision-makers and external actors to consider local communities as being shocked victims who were without agency (capacity to learn and transform and act effectively, i.e. resilience), inclined to panic, did not have knowledge or capacities to contribute usefully and therefore had to be kept out of the way. According to this worldview, any initiatives local people could take and any spontaneous behaviour was a potential threat to themselves and to the proper functioning of post-disaster operations and, therefore, the involvement of the public was time-consuming and pointless. All this came with the idea that consideration of human rights and social and environmental impacts was a waste of precious time; normal laws, governance oversight and local democracy could have retarded emergency operations; and to be efficient there needed to be a single ‘man in charge’ who had authority to make quick decisions, and this concerning both the decisions that had to be taken by the DCP or the local authorities (Imperiale and Vanclay, 2016a, 2018, 2019).
Overall, instead of building a glocal culture of risk management and resilience, the command-and-control approach to resources adopted by external and local authorities (e.g., financial resources, natural resources, the built environment and associated land use, environmental, social protection and planning approaches), which was embedded in the national civil protection system, facilitated the building of a culture of disaster capitalism.

**Understanding counterproductive learning**

Drawing on findings in Part 2, and discussed immediately above and in Chapter 9, in Figure 10.11, I conceptualise the cognitive dimension of top-down response to risks and impacts in a context of crisis or disaster.

![Figure 10.11: The cognitive dimension of human agency of external actors adopting a top-down command-and-control, civil protection approach.](source: This Paper)

When external interventions are implemented through such a worldview, they have the potential to negatively influence the local community’s ability to enact the changes in feelings, attitudes and behaviours that are necessary to build a *glocal culture of resilience* and to orient their intentionality towards learning and transforming for better reducing disaster risks and impacts and build resilience. Especially when such a cognitive dimension is accompanied and amplified by local, national, and international media, they have the potential to facilitate those changes in feelings, attitudes and behaviours that enable both at the local community level and at other levels of society, the perpetration of business as usual and a culture of disaster capitalism, rather than contributing to enhance social learning, transformation and build resilience at all levels of society. In our case, by promulgating disaster myths, creating perverse opportunities, and failing to have adequate oversight mechanisms, local people’s emotions, attitudes, and behaviours were affected: empathy turned into fear and suspicion; social responsibility into a gold rush; and mutual aid into rent seeking, elite capture, organised crime infiltration and disaster capitalism (see Chapter 6, 7 and 8).
Overall, the L’Aquila story reveals that a command-and-control approach obstructs at the cognitive level the building of community resilience creating a counterproductive learning at multiple levels of social organization (see Figure 10.12). In times of crises and disasters, counterproductive changes in feelings attitudes and behaviours happen both among external actors and local communities. The culture brought by external interventions has the potential to induce negative changes also at the local level, enabling rent-seeking, elite capture, and the pursuing of individual self-interests, especially of the most powerful, undermining resilience to emerge and be built at the local community level.

![Figure 10.12: The Counterproductive Learning](source: This Paper)

The L’Aquila case and the structural failures at the interactional level

Recovery and initial reconstruction operations in the L’Aquila crater following the 6 April 2009 earthquake were carried out relying on emergency powers and derogations, adopting a command-and-control approach and top-down planning. These institutional arrangements were used by the DCP for emergency shelters and temporary housing provision (see Chapter 6), and by local authorities for disaster rubble management, the enhancement of local infrastructure, the reconstruction of key public buildings, and initial planned interventions on the built environment, including demolitions and shoring-up solutions on public and private buildings (see Chapter 7, and 8). Notwithstanding the presence of the army patrolling the area, few days after the earthquake, demolition teams moved into the L’Aquila red zone to remove the rubble (see Chapter 7). A few weeks after, thousands of freelance professionals appointed as volunteers of the DCP began the assessment of the habitability of the damaged buildings in the crater by the end of October 2009 (see Chapter 8). While people were locked out from the historical city centres
by the building of high fences and the army patrolling their borders, private building firms directly appointed by national and local authorities were removing, transporting, and disposing the rubble (see Chapter 7).

Separate to the habitability assessments, the local mayors established technical teams to identify the buildings that needed safety measures. The mayors and their technical managers directly appointed firms to design and implement these measures (see Chapter 7 and 8). National and local influential building firms that were appointed through no-bid contracts carried out interventions on public and private buildings, including demolitions, shoring-up solutions, and reconstruction of key strategic buildings outside and inside the red zones without any public oversight nor any systematic engagement of the local homeowners. The red zones of all villages of the crater were delivered in the hands of influential building firms. Legitimised by mayoral ordinances, these building firms were in control and could basically do as they wished on public and private buildings (see Chapter 7 and 8). They could get access to buildings while the owners were locked out of their homes and forced to live in emergency conditions hundreds of kilometres away.

All this occurred while: the city centres of the 57 municipalities of the crater and their rural suburbs were declared red zones; local affected people were first evacuated, scattered in hotels along the Adriatic coast or in the tent camps dispersed all over the L’Aquila crater, and then evicted respectively from their homes and their tent camps and forced to stay for a prolonged period of time in emergency conditions; disaster myths on local communities, including the myth of jackals, and on time, including ‘urgency’ (see Chapter 6 and 7), were mainstreamed and embedded at national and local level; extraordinary control mechanisms on affected local populations were implemented; a huge number of military and police personnel were deployed and the whole crater was militarized; an impressive amount of external volunteers visited the area; derogations from any ordinary law regulating the democratic governance of the affected place were in force, including: public oversight, public procurement, anti-mafia controls, environmental, social and human rights impacts, public health and environmental safeguard policies and regulations (see Chapter 6, 7 and 8).

The militarization of the emergency area and the creation of red zones contributed to exclusion, homelessness, powerlessness, and social disarticulation (see Chapter 6, 7 and 8). The use of emergency powers was deemed necessary because of perceived urgency and the intention to quickly end the emergency. However, instead of ending it, the use of emergency powers extended the emergency, allowing the national and local elite to exploit the post-earthquake situation. This resulted in delaying reconstruction of the local physical and social fabric, and in extending the time local people were compelled to live in emergency conditions, thus increasing harm in the short, medium, and long term. Shortly after the earthquake, a plan for the provision of temporary housing (the CASE project) was designed and implemented without any engagement of the local affected population. The hastiness of its implementation was justified by the alleged need to act quickly. There was no consideration of environmental or social impacts and human rights issues, or concern for proper governance.

Immediately after the earthquake, rubble removal, demolitions, and shoring-up solutions on private buildings were implemented without gaining permission from homeowners or families of victims, something that was a breach of decency and dignity, and a violation of the human right to property (see Chapters 6 and 7). In less than 6 months after the earthquake, the whole red zone of L’Aquila city was put into safety. The red zone was carved-up into districts and assigned to various influential local building firms (see Chapters 7 and 8), something that also occurred within all the red zones of the mountain suburbs and villages across the L’Aquila crater. Years after the earthquake, local municipalities still considered demolitions and safety measure implementation as ‘urgent actions’ that could be carried out using emergency procedures without
the need to gain the consent of the legal homeowners. Since the immediate aftermath of the L’Aquila earthquake, disaster rubble was managed in derogation of any ordinary law concerning environmental and public health safeguard or anti-mafia controls, something that represented an avenue for organised crime infiltration in the L’Aquila crater (see Chapters 7 and 8).

Use of emergency powers and derogations, and the adoption of a command-and-control and top-down planning turned post-disaster interventions into an opportunity for rent-seeking, elite capture, disaster capitalism, mafia infiltration, and corruption (see Chapters 6 and 7). In the L’Aquila crater, the emergency powers allowed national civil protection authorities to directly appoint suppliers to provide the goods and services needed for the emergency accommodation (e.g. food, portable toilets, see Chapter 6). They also allowed national and local authorities to directly appoint staff, consultancies and building firms to construct temporary accommodation, restore public buildings, implement safety measures, demolitions and reconstruction plans, manage disaster rubble, and construct infrastructure (see Chapter 7). All this was in disregard of human rights and without considering environmental and social impacts.

Together with disaster rubble management, also this was implemented through a large use of derogations, especially from ordinary public regulatory frameworks related to safeguard the democratic governance of the crater and the wellbeing of local communities and their health. These derogations included derogations to: public procurement, public oversight, anti-mafia controls, environmental and public health safeguard requirements. Local communities were excluded from the reconstruction process, and their right to learn from the disaster and decide about the future of their properties, their villages, their city, and their region was disrespected in recovery and initial reconstruction activities. The environmental and social impacts created by the implementation of disaster management interventions negatively influenced the long-term development of affected communities. Many decisions taken under the regime of emergency powers continued to be implemented for years afterwards.

Overall, the way recovery and reconstruction processes were conceived, decided, designed and implemented following the earthquake turned post-disaster interventions into opportunities for rent seeking, elite capture, disaster capitalism, organised crime infiltration and corruption. All up, the recovery operations carried out during the State of Emergency, which lasted three years, represented a second disaster for local people. The emergency management, the recovery and reconstruction processes following the 6 April 2009 L’Aquila earthquake has costed over €22 billion until now (Finocchiaro, 2017). After 10 years, however, red zones throughout the crater are still formally in force and over 10,000 people still live in temporary housing (Imperiale and Vanclay, 2019; Barabino and Sansa, 2019). All this surely was not the intended social development outcome of the public investments made both at the national and the EU level for the recovery and reconstruction of the L’Aquila crater, and is unconceivable if contrasted with the impressive amount of public money spent following the L’Aquila earthquake for the recovery and reconstruction of the L’Aquila crater and local communities.

Understanding counterproductive transformations at all levels of society

Analysing the counter-productive actions that undermine resilience at the interactional level means understanding the impacts of the interventions on the social interactions that enable resilience to emerge at the community level and be built at other levels of society (see above, Figures 10.5-10.9). Typically, top-down, command-and control approaches are adopted by national and local authorities in response to disaster risks and impacts to manage the financial resources available to mitigate these risks and impacts. The institutional and financial arrangements used in times of crises and disasters to exercise the political control over resources (e.g. financial resources, natural resources, the built environment and associated land use, environmental, social protection and planning approaches) enable the use of emergency powers
and state secrecy provisions, and allow derogations from any ordinary law regulating the
democratic governance of the affected landscapes.

Especially in times of crises and disasters, knowledge production and management of public funds and financial support addressed to respond to crises and disaster risks and impacts are still organized through such models in a strict, rigid, bureaucratic and centralized way, centralizing responsibilities and stifling local action. This has the potential to obliterate community resilience, extinguish community initiatives, annihilate the capacities of local communities, and worsen social risks, thus exacerbating vulnerabilities and disaster risks and impacts, and producing what we define *counterproductive transformation* (Drabek and McEntire, 2003; Tierney et al., 2006; see Chapters 3, 5, 6 and 7).

In Figure 10.13, I describe the counterproductive transformation within top-down, command-and-control approach to financial resources and disaster risks and impacts. Such an approach creates negative impacts on the horizontal interactions, upwards integrations and downwards regulation, which constitute the interactional dimension of resilience at multiple levels of social organization (i.e. social resilience, see Figure 10.5). Through such an approach, the cultural, social, and ecological dimensions of resilience in society (see Figures 10.5-10.9) also get dismantled by being negatively affected by a top-down, command-and-control financial and cognitive regulations and by rent-seeking and elite capture at the local community level and other levels of society.

**Figure 10.13: The counterproductive transformations in external interventions**

*Source: This Paper*

**Understanding counterproductive transformations at the community level**

Local communities, especially the larger towns and cities, also include local elites who often capture the benefits of top-down planned interventions, and perpetuate ‘business as usual’, negating any chance for inclusive social learning and socially sustainable transformation. As the L’Aquila case showed, external actors can exacerbate risks and impacts by coopting local elites to win support for the top-down plans. As mentioned in Chapter 2, corruption at all levels of society has negative social and economic consequences, especially in terms of how it exacerbates pre-disaster vulnerability (Lewis, 2010, 2017). Escaleras et al. (2007), after having analysed 344 earthquakes occurring between 1975 and 2003, confirmed that public sector corruption, especially as it applies to construction processes, is positively and significantly correlated with the number of fatalities.
Based on a panel of 42 countries, Kyriacou et al. (2015) pointed out that, because it is characterised by potentially large rents and government intervention, the construction sector may contribute towards public sector malfeasance and advocated for implementing appropriate policies and procedures, ethical codes and related training programs for construction industry professionals (Kyriacou et al., 2015). Although progresses have been made in analysing elite capture and corruption and its negative implications for DRR, still little has been said about the negative impacts of these social processes and trends on the cognitive and interactional dimensions that enable resilience to emerge and be built at the local community level and at other levels of society.

In Figures 10.14 (a)-(d), I conceptualize the likely impacts that such negative social trends can create in multiple points in time, on the interactional dimension of community resilience within the reconstruction process of a destroyed neighbourhood. Represented in Figures 10.14 (a)-(d), in yellow, the economic relationships that typically characterize interactions among private firms (E) and local or national technicians (T); in red (dashed arrows) the elite pressure (and capture) exercised by Es on groups of local inhabitants (I) on their psychological health (H), their socio-cultural values (V) and their private economic interests (B) and on local (and regional) public administrations (PA); in red (downwards arrows) the top-down approach on the reconstruction process of the neighbourhood, which creates negative impacts on, and conflicts within neighbourly relationships and neighbourhood’s resilience (cf. Figures, 10.6-9), MP represents a top-down planning (e.g. a masterplan) or a parallel structure directly established by the state or by the national, regional, or local civil protection authorities (see Chapter 7 and 8).

![Figures 10.14 (a)-(d): Counterproductive transformations in post-disaster reconstruction](image)

Source: This Paper
What can be learned by the disaster management and development practice?

Although there was a switch from civil defence to civil protection arrangements following the paradigm shift from a ‘war approach’ to consider disasters in the context of socially-produced vulnerability, this was not accompanied by any change in the traditional top-down militaristic command-and-control, institutional arrangements and management models that traditionally accompany disaster management led by the state, civil protection authorities or other international organizations (Alexander, 2002). Despite these developments, the fundamental nature of the command-and-control approach adopted also by civil protection systems has not changed. The more recent approach to command-and-control enlarges the operational domain of command-and-control also to coalitions, humanitarian, reconstruction and peace operations, and defines “Consultation, Command, and Control (C3)” as “the responsibilities and activities of political, military and civil authorities in political consultation, including crisis management, nuclear consultation, and civil emergency planning. The term also applies to the authority, responsibilities and activities of military commanders in the direction and coordination of military forces and in the implementation of orders related to the execution of operations” (NATO glossary, see Alberts and Hayes, 2006, p.37).

The shift from the defence sector to the interior sector did not coincided with any change in the institutional arrangements or in the management and planning models coming from the civil defence departments. Nor there was there any change in the culture these models bring about in disaster management and development practice, with the result of militarising political consultation and development, rather than de-militarising development and risk reduction strategies or creating effective community empowerment systems at the local level to enhance DRR and build resilience at all levels of society. The result was that military approaches, such as the command-and-control approach to resources (e.g. financial resources, natural resources, the built environment and associated land use, environmental, social protection and planning approaches) have been transferred to any sector including the management of natural, economic and financial resources, including policy making, political consultations, decision-making processes and crisis management, the expropriation of land for large infrastructure projects, and civil protection, humanitarian and peacekeeping operations (Houck, 1993; Alberts and Hayes, 2003 UNDPKO, 2008; Guéhenno and Sherman, 2009; Ford, 2012, see Chapter 6).

Elaborating on the five components that constitute the agency of external actors in post-disaster reconstruction (Jah et al., 2010), and expanding them to encompass disaster prevention, preparedness and recovery, in this section I summarise the main findings and empirical evidence reported in Part 2 (see Chapters 5, 6, 7 and 8) and discuss the main failures in the institutional and financial strategies, the community participation, physical planning, and risk management approaches adopted.

The Institutional strategy before and after the earthquake: the arising of social exclusion

Before the 6 April earthquake, and especially because of the earthquake swarm that lasted for over many months beforehand, the institutional strategy adopted by national and local authorities was to convene the national Major Risk Commission (MRC) “to carefully analyse the scientific and civil protection issues related to the seismic sequence occurring in L’Aquila Province over the last four months and which culminated in the 4.0 earthquake on 30 March 2009 at 15.38 local time” (Tribunale di L’Aquila, 2012, p.94, see Chapter 5, p.117). The MRC was convened by the Italian Department of Civil Protection (DCP) through emergency procedures (see Chapter 5). The meeting was closed to the public. By being convened through emergency procedures, the scientific knowledge produced by the MRC scientists was expected to be techno-scientific advice to serve national and local civil protection authorities.
The intent of national and local authorities was to “shut up any imbecile, calm down any conjectures and worries” (see Chapter 5, p.122) and subdue collective anxiety and unjustified alarmism. In asking the scientists to “carefully analyse the scientific and civil protection issues related to the seismic sequence occurring in L’Aquila Province” (Tribunale di L’Aquila, 2012, p.94), the DCP expected that there be a risk assessment only in terms of the likelihood of a strong earthquake in the short term. The focus of the risk assessment was not on local people’s wellbeing, their vulnerabilities, resilience, or transformative change processes, but strictly only on the hazard phenomenon. What the MRC scientists and DCP understood as ‘civil protection issues’ were actually matters of public control rather than DRR (see Chapter 5).

Our analysis in Chapter 5 revealed multiples failures by all relevant institutions at all levels. There was an over-reliance on techno-scientific analysis, which failed to understand the social dimensions of disaster risks and failed to engage local communities in knowledge co-production and sustainable transformation. The regulations governing Italian civil protection do not establish any particular measures that must be adopted to implement DRR and build resilience other than “generic cautions that the institutional bodies have to adopt in general” (see Chapter 5, p.124). At the practical level, there was a lack of planning and an over-reliance on a top-down system of command-and-control that centralised responsibility and stifled local action. It was clear that the meeting of MRC scientists was only a political stunt intended to harness their status to make a statement that could be used by politicians to calm and control the public, and to legitimise the lack of institutional (and social) preparedness. This lack of preparedness was not considered a relevant matter to discuss in the MRC meeting. As our document analysis revealed, within the regulatory framework ruling civil protection system in Italy there is still a lack of understanding about how to conduct a proper disaster risk assessment and fully respect the duty of care concerning DRR and resilience.

After the 6 April 2009 earthquake, a complex set of institutional arrangements were implemented by the state. The primary mechanism was the declaration of a State of Emergency, which was left in place for three years, an extraordinary long time (Venice Commission 1995; Khakee, 2009; Alexander, 2010; 2013). Certain political leaders were given emergency powers and state secrecy provisions to manage financial resources and disaster recovery and reconstruction. DICOMAC became the extraordinary government of the crater (Imperiale and Vanclay, 2016, 2019a). After 10 months, DICOMAC was replaced by a new temporary government agency, the Struttura Tecnica di Missione (STM), which was intended to support the Abruzzo Region President, Gianni Chiodi, and the L’Aquila Mayor, Massimo Cialente, especially in relation to reconstruction efforts (OPCM n.3833, art.1 and 2). Numerous national laws, and government, civil protection, regional and mayoral ordinances and decrees enabled derogation from ordinary public procurement and oversight procedures, anti-mafia controls, environmental and public health safeguard policies, and led the dismantlement of the local democratic governance of the crater (see Chapters 7 and 8).

This institutional strategy allowed a temporary housing scheme to be designed and implemented without any community needs assessment. There was no requirement to assess the environmental, social or health impacts created by such a scheme. Apartments were allocated without any transparent criteria for equitable allocation. Nor was there any procedure to restore, engage, and strengthen previous neighbourhood relationships. The scheme was poorly implemented allowing rent-seeking, elite capture, disaster capitalism, organised crime infiltration and corruption (Alexander, 2010, 2013; Imperiale and Vanclay, 2019a).

The state granted local political leaders emergency powers to implement ‘urgent measures’, a term that was applied to a wide range of tasks, including: the identification of existing landfill sites for rubble disposal; the identification of new disposal sites; the removal, transport and disposal of rubble; the establishment of technical teams to identify buildings that needed to be
put in safety or demolished; the management and implementation of safety measures and demolitions; the design of local reconstruction strategies; the reconstruction of public buildings, including schools, churches and other heritage properties; and other tasks local authorities were responsible for in the normal situation, such as the building of a bridge, and the enhancement of local roads and the railway. Surprisingly, ANAS spa, a state-owned road construction company, also obtained the same emergency powers ‘to restore with maximum urgency the ANAS offices in L’Aquila’ (OPCM n.3755, art.14). These interventions were undertaken without any requirement for assessing the environmental, social, health, and human rights risks and impacts associated with disaster rubble management and disposal, or with safety measures implementation and demolitions, or identification of groupings of houses for reconstruction project proposals and initial local reconstruction policies and interventions. There was no attempt to prevent rent-seeking, elite capture, disaster capitalism, organised crime infiltration, corruption, inequity, social exclusion, or the exacerbation of local vulnerabilities, risks and impacts.

The institutional strategy, up to 2012 at least when the Monti government took office, was to regulate the reconstruction process and the state contribution via a large number of government, civil protection, regional and mayoral ordinances, and decrees. Changes in these ordinances and decrees over time created differences in treatment, and confusion and alienation for most people, especially the most vulnerable. Derogations transformed rubble, safety measures implementation and demolitions into an avenue for rent seeking, disaster capitalism, and organised crime infiltration.

The financial strategy after the earthquake: the arising of inequity

During the 3 years of the State of Emergency, national (DCP) and local authorities (i.e. the Presidents of the Abruzzo Region and the L’Aquila Province, and the local mayors) adopted a top-down, command-and-control approach to allocating financial resources for post-disaster interventions (see Chapter 6). Financial resources were made available by the state through the Civil Protection Fund and other financial arrangements. National and local authorities had unlimited access to this fund, and used this money through emergency powers and state secrecy provisions, with the state covering any deficit for many years following the earthquake. There was no transparent or accountable financial strategy governing post-disaster interventions, and national and local authorities made considerable use of no-bid contracts. Only 6 days after the earthquake, the government allocated €300,000 through no-bid contract to a private foundation to develop the idea of a temporary housing scheme (OPCM n.3755, art.12, Imperiale and Vanclay, 2019a). On 28 April 2009, in Law Decree n.39, the state allocated €200 million to ANAS spa, and €100 million to the Italian railway network agency (RFI). ANAS and RFI implemented actions that were already conceived within previously-agreed frameworks. These actions were implemented under the emergency procedures without any environmental, social, or cultural heritage assessment, creating social conflicts, discontent and further social fragmentation and exclusion (see Chapters 7 and 8).

Local authorities used no-bid contracts to appoint building firms to demolish buildings, design and implement shoring-up solutions, manage disaster rubble, and design reconstruction of public buildings, including schools, churches, and other heritage properties. All activities managed through this strategy, lacked transparency and accountability, something that undermined inclusive and participatory social learning and transformation. The state secrecy provisions, lack of disclosure, and derogations associated with the State of Emergency, served to hide dubious arrangements, disguise fraud and corruption, and facilitate disaster capitalism and organized crime infiltration, thus worsening local inequity and social exclusion. There was no requirement to assess the longer term environmental, social, and economic sustainability of these activities. Within the strategy, there was no consideration about how to prevent post-disaster interventions from becoming an ongoing cost for local communities.
There was no requirement to prevent the exacerbation of local social risks, vulnerabilities, and the root causes of disaster (e.g. inequity, social exclusion, placelessness, homelessness, elite capture, poverty, morbidity, gambling, organised crime infiltration, poor governance).

The community participation and physical planning approaches: lack of DRR and resilience

From a DRR and resilience perspective, community engagement is crucial to better understand local vulnerabilities, capacities and the root causes of disaster, enhance learning and transformation and build back better more resilient communities, neighbourhoods, villages, cities, and landscapes (IDNDR, 1994; UNISDR, 2005, 2015). Both before and after the 6 April 2009 earthquake, the military-type, strict, command-and-control approach adopted by local and national authorities was accompanied by disaster myths that led them to ignore and exclude the role of local communities in disaster management activities and their cognitive and interactional capacity to learn, transform and be resilient (see Chapters 5, 6, 7 and 8). Such a command-and-control approach was implemented through an institutional mechanism that turned the local mayors and the presidents of the Abruzzo Region and the L’Aquila province into the local civil protection authorities of the crater. Such a mechanism led to the recognition, engagement, and empowerment of the role only of the mayors, and of the presidents of the Abruzzo region and the L’Aquila province. This way, both before and after the L’Aquila earthquake, disaster management interventions were considered the exclusive responsibility of local authorities, while the local elected councils and local communities were excluded from the conception, decision, design, and implementation processes of these measures. This did not lead to any positive social learning and transformation at the local community level about the local vulnerabilities and social risks that undermine effective enhancement of DRR and resilience.

As discussed above, before the earthquake, the poor state of buildings and related disaster risk within the L’Aquila area was well known given the many technical reports that had been produced (Boschi, 1995; Barberi et al., 2007, see Chapter 5). Although these reports cost millions of euros each, they were ignored by governments at all levels and were not intended to be transformative. After disasters, the reconstruction approach ideally should address how physical reconstruction of damaged buildings is carried out at the local community level (see Chapter 8). It includes the processes of: (i) defining the role of affected households; (ii) whether or not opting for temporary housing, and the likely consequences of this in terms of delays for the proper physical reconstruction and use of financial resources; (iii) incentives to ensure coordination of housing and infrastructure, DRR measures implementation and compliance with safety standards (Jah et al. 2010, see Chapter 8). People’s attachment to their houses and the materials that comprised their houses is a potential driver for participatory post-disaster reconstruction. Inclusive, accessible, and non-discriminatory community engagement and empowerment is also crucial to recognise and strengthen local communities’ resilience and their ability to learn and transform to build back better their neighbourhoods, villages, cities (IDNDR, 1994; UNISDR, 2005, 2015).

Any planned intervention concerning the reconstruction of the local built environment should engage local neighbourhoods and their capacity to learn and transform towards enhanced DRR and resilience (Jah et al., 2010). Elsewhere, resident involvement in the selection and storage of building materials that could be reused has led to community building in the reconstruction process (Denhart, 2009). In L’Aquila, unfortunately, such interventions were not considered as an opportunity to boost genuine community engagement and empowerment strategies to enhance positive collective actions and build resilience (i.e. social learning and transformation) and boost the permanent reconstruction of local peoples’ houses and neighbourhoods.

In the actions implemented by the DCP, only the local mayors and their trusted technicians were consulted, by-passing the elected local councils. For the temporary housing scheme
implementation, for example, the DCP adopted a consultation-command-and-control approach (see Chapter 6) through which all decisions around the project and its locations were made by the DCP in consultation with the L’Aquila Mayor and two professionals the Mayor had appointed using emergency procedures. The L’Aquila council was excluded from the decision-making related to the CASE project and its implementation, and from the establishment of the apartments’ allocation criteria. No participatory community needs assessment oriented the design and implementation of the temporary housing scheme. Local people’s ideas about likely alternative solutions were not taken into consideration (Imperiale and Vanclay, 2019a).

Similarly, in the actions implemented by the presidents of the Abruzzo Region and the L’Aquila province and by local mayors through the Dicomac, the STM, and the local Office of Public Works of the Ministry of Infrastructure and Transport (Proveditorato Interregionale alle Opere pubbliche), only the directors of their technical offices, and/or the state owned companies – which were partner of some of the operations carried out – were consulted. This by-passing the elected local councils, and using emergency powers and derogations, at the expenses of the democratic governance of the crater (see Chapter 7). Being granted emergency powers and covered by state secrecy provisions, local authorities managed, for example, first safety measures implementation; the gathering, transport, and disposal of disaster rubble; and first local reconstruction policy, design and implementation without providing any instruction to building firms and professionals on how to implement genuine local community engagement and empowerment. For the L’Aquila city center, it took more than two years before any formal procedure was established to regulate how financial resources could have been allocated directly to local people affected by the earthquake. In many mountain villages around L’Aquila, this took even longer, further exacerbating inequity and social exclusion and other social risk processes and outcomes (e.g. rent-seeking, elite capture, organized crime infiltration, disaster capitalism, placelessness, homelessness, gambling, poverty, morbidity) across the crater.

In only 6 months following the earthquake, while all local people were scattered along the Adriatic coast, or across the crater inside the tent camps, and while the red zone was in force, the whole L’Aquila city centre was put in safety and so were all the mountain villages around within few years. The haste at which demolitions and shoring-up solutions were conducted and rubble removed was evident in the extent to which personal effects were present amongst the rubble. It was also evident in the extent of damage to furniture inside the buildings where shoring-up solutions were implemented. Since the very first days after the earthquake, these operations were implemented without gaining formal permission from the local homeowners or families of victims, something which is a breach of decency and dignity, and a violation of the human right to property. Years after the earthquake, local municipalities still considered demolitions and safety measure implementation as ‘urgent actions’ that could have been carried out using emergency procedures without the need to gain the consent of the legal homeowners or provide information to the local government prefecture (see Chapter 7 and 8).

Up to end of 2009, being appointed as volunteers by the DCP, thousands of private professionals could conduct the habitability assessment and identify groupings of houses, without establishing any formal procedure for gathering the homeowners or inhabitants’ consent, nor for informing them on the technical processes that were going on, nor to instruct the homeowners and inhabitants on how to get access to the fund allocated for the reconstruction of their neighbourhoods. Similarly, being enabled by the various local mayoral ordinances, up to May 2011, in the L’Aquila municipality and in its mountain suburbs, and up to even later in all the mountain villages around, local municipalities could appoint building firms to implement safety measures, demolitions, and universities to develop reconstruction plans. Local technicians could identify and nominate first groupings of houses, and design first reconstruction project proposals without having established any formal procedure of community engagement and empowerment, nor gathering the formal homeowners’ and inhabitants’ consent. In the L’Aquila mountain
suburbs, mayoral ordinances instructing safety measures implementation and demolitions kept being issued up to 2012, without gathering the consent of local homeowners’ and inhabitants. Where some homeowners were engaged initially, this did not really foster cooperation, mutual aid, and inclusion among all the inhabitants in the neighbours and within the groupings of houses identified, but was characterised mainly by seeking individual gain. Nor was there any process to facilitate cooperation among the different technicians in order to avoid proliferation of reconstruction projects and ensure a more cost-efficient, and sustainable reconstruction of local people’s homes and neighbourhoods.

In the post-disaster interventions carried out by national and local authorities, there was no consideration about whether the temporary measures adopted both for the construction of new housing (i.e. temporary housing) and for the implementation of safety measures could have negatively influenced permanent reconstruction. Furthermore, derogations provided through the numerous ordinances made initial reconstruction policy, design, and implementation weak in terms of the DRR measures required and implemented. The regional law, n.28 (11 August, 2011), placed the L’Aquila crater once again in Zone 2 (i.e. ‘moderate seismicity’), confirming previous seismic classification issued in 2003, 1984, 1974 and 1927 that were the result of a general laissez-faire adopted by the L’Aquila municipality over many years and pressure from local speculative builders (Stucchi and Meletti, 2009; Alexander, 2010, 2014).

Over years, the political patronage system in Italy has led to elite capture and distortion in the allocation of funds, and to poor planning practice and culture. According to the legal framework underpinning Italian disaster governance and to the trial documents, responsibility for implementing DRR strategies is up to the Presidency of the Council of Ministers operating through the national DCP and the local civil protection authorities (see Chapter 5). Although the Italian State issues laws, provides recommendations, establishes building codes, and commissions technical reports and top-down information campaigns, there is little in this system that demands the co-production with local communities experiencing disaster risks of a transformative knowledge capable to build a glocal culture of resilience and enhance DRR and resilience at all levels of society. There is little in this system that protects against elite capture and disaster capitalism or ensures adequate implementation. Restrictions on funding for DRR prevention, and because of malpractice and poor governance, and a belief that DRR is a constraint to development, local political authorities are often unwilling and ill-prepared to implement DRR and build community resilience. Consequently, in L’Aquila, before the earthquake there was a lack of prevention and preparedness. Maintaining most of the L’Aquila crater in Zone 2 after the earthquake, and derogations from DRR measures in the initial reconstruction of local public schools, indicates that post-disaster interventions failed to pursue social learning and transformation at the local institutional and community level.

**The risk management approach: the lack of transformative risk and impact assessment**

Before and after the L’Aquila earthquake, vulnerabilities, risks, and impact reduction activities were considered as the responsibility primarily of national and local authorities, which became the civil protection authorities of the crater. The knowledge production process about local environmental, political, economic and social vulnerabilities, risks and impacts that accompanied disaster management interventions was intended to be techno-scientific advice to serve the interests of the national and local authorities rather than being co-produced with the local affected neighbourhoods and a broader constituency of society, and oriented to build socially-sustainable transformations and strengthen resilience at all levels of society (Imperiale and Vanclay, 2019a, 2019b).

Before the earthquake, such knowledge was not informed by any analysis concerning local vulnerabilities affecting local communities’ wellbeing and negatively influencing the local
people’s perception and experience of disaster risks. There was no analysis concerning local capacity to learn and transform, which was already leading local people to take meaningful actions to reduce, or demanding to reduce local vulnerabilities and associated disaster risks (Imperiale and Vanclay, 2019b). The assessment and reduction of local vulnerabilities and the root causes of disaster was considered irrelevant. Assessing only the likelihood of the hazard was considered enough to assess the multiple dimensions of disaster risks which, before the 6 April 2009 earthquake, were affecting the perceptions and experiences of local people, neighbourhoods and communities living in the L’Aquila crater (Imperiale and Vanclay, 2019b). Among the social risks taken into account before the earthquake, only collective anxiety, unjustified alarmism, or likely deviant behaviours were considered (Imperiale and Vanclay, 2019b). Rather than building a co-produced and transformative knowledge through which enhancing inclusive learning and empowering socially sustainable transformations at the local level, the risk assessment served the civil protection command-and-control approach which was intended to “shut up any imbecile, calm down any conjectures, worries”, collective anxiety, or unjustified alarmism.

After the 6 April 2009 earthquake, there was nothing in the system that required adequate assessment of local communities’ needs and capacities, nor of the environmental, social, and human rights risks and impacts that disaster recovery, reconstruction, and development activities, including temporary housing, disaster rubble management, safety measure implementation and demolitions, might have created on local communities and their wellbeing. The knowledge concerning local vulnerabilities and disaster impacts was considered as being a techno-scientific knowledge which concerned only the vulnerabilities of the built environment, rather than of the multiple dimensions of community wellbeing. The only social risks addressed were looting and other deviant behaviours among affected local communities. To address these social risks, the city centres of the crater were evacuated, red zones were established, and an impressive number of military personnel and people in uniform or hi-vis clothing, as well as a large number of emergency, police, and military vehicles was deployed, and the crater was ridiculously militarised creating unbearable impacts on affected local communities (Imperiale and Vanclay, 2019b). All this further exacerbated the exclusion and marginalization of local homeowners and inhabitants from the reconstruction of their homes, neighbourhood, villages, and city. There was nothing in the system to assess, reduce, and/or avoid/prevent the risk of rent-seeking, elite capture, weak local governance, disaster capitalism, organised crime infiltration, inequity, social exclusion, placelessness, homelessness during disaster recovery, reconstruction, and development in the three years following the 6 April 2009 earthquake, in which the State of Emergency was in force, and even beyond.
What needs to be transformed?

Drawing from the findings reported in Chapters 5, 6, 7 and 8 and discussed above, below I provide a reflection on how the desired outcomes of local community resilience can be included within any planned intervention and at multiple levels of social organization, and in the key strategies that should characterise the policy and governance of disaster management and development interventions before and after disasters: (i) the institutional strategy; (ii) the financial strategy; (iii) the community participation approach; (iv) the physical planning approach; and the (iv) risk management approach. I reflect on the outcomes of resilience as it comes into action at the local community level. Elaborating on the five components of post-disaster reconstruction (Jah et al., 2010, see Chapter 8), and expanding their domain to include any disaster management and development intervention before and after disasters, I reflect on how community resilience outcomes should also become the principles, means and intended outcomes through which the institutional and financial strategies, community participation, physical planning (e.g. reconstruction approach) and risk management approaches should orient any planned interventions towards building resilience and achieving social development outcomes before and after disasters.

The institutional strategy: from command-and-control to social learning and transformation

Both before and after disasters, the institutional strategy leading any disaster management and development intervention, establishes who will do what, how the numerous local and external organizations are coordinated, and work together, and the laws, regulations, and institutional arrangements, both formal and informal, that will apply and regulate what development, disaster management and reconstruction agencies do before and after disasters (Jah et al., 2010). Coordination is an activity that helps all actors involved in disaster management and development interventions make and implement common decisions to best serve the needs of affected local communities (IFRC and OCHA, 2010). Coordination is also a way of ensuring that the affected population can play a key role in decision making (IFRC and OCHA, 2010). As recommended by the United Nations (IFRC and OCHA, 2010, p.5): “given that the aim of the response is to support the populations affected by the disaster, the capacities, needs and priorities of these populations should be represented centrally and the response should be accountable to them. Care must be taken not to politicise the process and initially participation may be achieved more practically at sub-national and community levels”.

Ideally, to ensure that participation (i.e. social inclusion) is included within the agency of external actors, it should also be the principle, means and intended outcome of the institutional strategy of any disaster management and development intervention, before and after disasters. This institutional strategy should build effective coordination among all local and external actors, and the co-management (co-conception, co-decision, co-design, co-implementation) of any disaster management and development intervention. Such coordination and co-management mechanism should ensure the participation of the affected local population, and that: (i) the needs, desires, and priorities of local people, especially of the most vulnerable, are considered and addressed; and (ii) that the positive individual and collective feelings (i.e. empathy), attitudes (i.e. social responsibility and caring), actions and behaviours (i.e. mutual aid and cooperation), knowledge, beliefs, values, narratives; and (iii) local community sense of community, sense of place, sense of risk are strengthened.

Both before and after disasters, in any disaster management and development intervention, coordination and co-management must be inclusive, accountable and transparent (IFRC and OCHA) and include local people and communities, especially the most vulnerable, so that they can take part in, and coordinate: (i) the reduction of local vulnerabilities, risks and the root causes of disasters; (ii) the assessment of community needs and damage; (iii) the mitigation and
monitoring of disaster risks and impacts; and (iv) the building of local capacities to reduce local vulnerabilities and the root causes of disasters, and enhance DRR and the multiple dimensions of local community wellbeing and resilience (IFRC and OCHA, 2010). Such institutional strategy should lead external actors to build effective transformative knowledge co-production processes with local communities that would build co-produced and transformative understanding of all these features characterizing the multiple dimensions of community wellbeing, thus enabling an environment of positive, inclusive learning and socially sustainable transformations, and building resilience at all levels of society.

Overall, a crucial shift in the traditional institutional strategy adopted by the state to orient, before and after disasters, disaster management and development interventions should be made from a command-and control to a coordination and co-management approach to resources (e.g. financial resources, natural resources, the built environment and associated land use, environmental, social protection, and planning approaches), thus enabling an environment of inclusive social learning.

*The financial strategy: from rent-seeking and elite capture to equity and mutual aid*

The financial strategy is the set of financial arrangements through which the state organizes the financial resources to design and implement external disaster management and development interventions (Jah et al., 2010). The financial strategy orients mobilization, programming, tracking, and allocation of these public and private financial resources. It should orient disaster management and development interventions towards reducing local vulnerabilities, risks and impacts and the root causes of disasters, enhance DRR, local community wellbeing and capacities, and build resilience at all levels of society, before and after disasters, thus achieving desired social development outcomes.

Resources must not only be mobilized, programmed, and tracked, they must also be allocated to implement disaster management and development interventions, and delivered to local people affected by the disaster (Jah et al., 2010). Before any investment, it is crucial that within local communities, non-financial programs are implemented to ensure that social learning and transformation and the community capacities of building resilience are enabled, and the social risks and vulnerabilities are prevented from being reproduced or exacerbated in the conception, decision, design, and implementation processes of any planned intervention. All this means that the local homeowners and inhabitants and a broader constituency of affected local communities must have the opportunity to: (i) learn from local vulnerabilities, risks and impacts and the root causes of disasters (i.e. understanding); (ii) get aware about the vulnerability and risk reduction activities that need to be implemented (know what to do) (i.e. recognizing); (iii) coordinate each other in collective entities thus being able to get direct access to the financial resources for the reconstruction of their houses and their neighbourhoods (i.e. engaging); and (iv) be legitimized to undertake collective actions towards (a) reducing local vulnerabilities, risks and the root causes of disasters; (b) enhancing their wellbeing to build back better more resilient neighbourhoods, villages and cities; and (c) individually and collectively learn from the actions implemented and transform towards achieving better social development outcomes and building resilience at the local community level and other levels of society (i.e. empowering).

Ideally, to ensure that equity (i.e. mutual aid and cooperation) as a community resilience principle, mean, and outcome, is included within the agency of external actors, it should also be the principle, mean and intended outcome of the financial strategy adopted by the states to orient the conception, design and implementation of any disaster management and development intervention, before and after disasters. The financial strategy should be accountable and transparent, and facilitate an environment of mutual aid and cooperation rather than a gold rush, rent-seeking or elite capture (see *Chapters 6, 7 and 8*). Drawing from Jah et al. (2010) we consider that the financial strategy leading any disaster management and development intervention, should
orient any investment in a way that they would consider how the interventions they are funding: (i) ensure equity in the distribution of the financial benefits within affected local communities, and mutual aid and cooperation among all actors involved and between external actors and affected local community; (ii) prioritize support to the most vulnerable and local vulnerability and risk reduction activities; (iii) prevent rent-seeking, elite capture, disaster capitalism, organized crime infiltration, and the command-and-control approach to resources in any planned intervention; and (iv) implement effective anticorruption measures.

Overall, a crucial shift in the traditional financial strategy adopted by the state to orient, before and after disasters, disaster management and development interventions should be made from facilitating rent-seeking and elite capture to pursuing equity, mutual aid and cooperation, thus enabling and strengthening socially sustainable transformations.

**The physical planning and risk management approaches: from top-down to socially-sustainable physical planning**

Physical planning is concerned with “the general pattern of land-use, the character and location of public buildings and structures, the design of streets, the location of transit and transportation systems, and all other physical facilities which are necessary or desirable to promote the economic betterment, comfort, convenience and general welfare” (Webster, 1958 cited by Pivo et al., 1990, p.54). Both before and after disasters, the physical planning approach influences the outcomes of any disaster management and development intervention. Such an approach should provide a framework to “propose the optimal physical infrastructure for a settlement or area, including infrastructure for public services, transport, economic activities, recreation, and environmental protection” (Jah et al., 2010, p.110).

Physical planning in its whole, should address reconstruction, DRR and long-term development (Jah et al., 2010). A reconstruction approach addresses how physical reconstruction of damaged buildings is carried out at the local community level. Similar to any physical planning approach orienting any disaster management and development intervention towards enhancing DRR and resilience at the local community level and other levels of society, a reconstruction approach should include the processes of: (i) defining the role of local communities (e.g. affected households and inhabitants); and (ii) providing incentives to ensure coordination of housing and infrastructure, DRR measures implementation and compliance with safety standards (Jah et al. 2010). In the specific case of post-disaster reconstruction, a reconstruction approach should also consider whether opting for temporary housing, and the likely consequences of this in terms of community discontent, local conflicts, exacerbation of social exclusion, delays for the proper physical reconstruction and misuse of financial resources.

Risk management ensures that any physical planning, before and after disaster, would consider (i) governance and corruption risk; (ii) environmental risks (and impacts); (iii) disaster risk reduction; and (iv) local vulnerabilities and social risks, including rent-seeking, elite capture, organised crime infiltration, disaster capitalism and corruption, all of which worsen local inequity and social exclusion, thus exacerbating local vulnerability and associated disaster risks and impacts (adapted from Jah et al., 2010; see Chapters 7 and 8). Ideally, to ensure that public awareness for (social) sustainability (i.e. DRR and resilience) as a community resilience principle, mean, and outcome, is included within the agency of external actors, it should also be the principle, mean and intended outcome of both the physical planning and risk management approaches that are adopted by the states to orient the conception, design and implementation of any disaster management and development intervention, before and after disasters. This means that a proper risk management pursuing public awareness for social sustainability through transformative knowledge co-production processes, should consider the social dimensions of risk and the capacities of affected local communities to learn and transform, and be resilient. Such a
risk management approach should be fully enabled by the institutional and financial strategies. This risk management approach should bring local communities and external actors about building a risk management culture at the local community level and other levels of society, and it should inspire any physical planning strategy before and after disasters.

Such a risk management approach should effectively inform the physical planning approach so that every disaster management and development intervention would adequately consider, before and after disasters (IDNDR, 1994; UNISDR, 2005, 2015):

(i) the local vulnerabilities and disaster risks and impacts that need to be reduced;
(ii) the environmental, social, and human rights impacts that may be created on community wellbeing by disaster management and development interventions, and that must be avoided; and their economic, environmental and social sustainability;
(iii) the social and environmental risks and root causes of disasters characterising the local context that need to be reduced and prevented during the conception, decision, design, and implementation of any planned intervention;
(iv) the local cognitive and interactional capacities of local communities to learn and transform and build resilience in each of the multiple dimensions of community wellbeing, and their role in any disaster management and development activity (adapted from Chapter 4).

Managing environmental and social risks and impacts, and building resilience at the local community level and other levels of society, is at the core of risk management. All this should inspire the institutional and financial strategy, the community participation and reconstruction approaches adopted by states to design and implement disaster management and development before and after disasters, and it should bring about a culture of risk management (Jah et al., 2010). A glocal culture of resilience (see Chapter 9) capable to orient external actors towards recognising (and learning from) the resilience of local communities and transform towards building resilience at all levels should accompany the building of a culture of risk management at all levels of society. Informing through adequate risk management the institutional and financial strategies, and the community participation and reconstruction/development approaches should lead any disaster management and development intervention to a shift from the traditional command-and-control to a cooperation-and-co-management approach to resources, strengthening the local people’s capacity to learn and transform while reducing the risk of rent-seeking, elite capture, organised crime infiltration, disaster capitalism, and corruption. All this should avoid the exacerbation of pre-disaster vulnerability and associated disaster risks and impacts affecting especially the most vulnerable and bring about enhance DRR and resilience at the local community level and other levels of society.

Overall a crucial shift is needed in the physical planning approach from a top-down planning to a socially sustainable planning (i.e. social resilience, see Figure 10.5). A crucial shift is also needed in current risk management approach from a top-down civil protection culture to a co-produced and transformative risk management approach that would enhance inclusive social learning and socially sustainable transformation (see Chapter 9). Such socially sustainable physical planning and co-produced and transformative risk management approach should bring about a glocal culture of community wellbeing, risk management and resilience and prevent the building of a culture of disaster capitalism.

The community participation approach: from emergency powers to community empowerment

Both before and after disasters the community participation approach is the set of institutional, financial, planning and management arrangements enacted by local and external actors to engage local communities (e.g. families, households, neighbourhoods) in physical planning. Ideally, to ensure that social cohesion (i.e. community wellbeing) as a community resilience principle,
mean, and outcome, is included within the agency of external actors, it should also be the principle, mean and intended outcome of the community participation approach adopted by the states to orient the conception, design and implementation of any disaster management and development intervention, before and after disasters.

Such a community participation approach should bring local community wellbeing, the vulnerabilities, risks, impacts and root causes of disasters threatening its multiple dimensions, and the local people’s capacities to learn and transform within each of these dimensions, back at the core of any planned intervention, both before and after disaster. A proper participation approach should lead external actors to co-produce transformative understanding with local communities about the multiple dimensions of their wellbeing, vulnerabilities, root causes, capacities, and resilience. This should thus strengthen local people’s knowledge, sense of community, sense of place, sense of risk and capacities to learn and transform towards enhancing DRR and resilience and achieving desired social development outcomes and the SDGs. Such an inclusive and transformative community participation approach should orient the institutional and financial strategies and the physical planning and risk management approaches so that local communities, especially the most vulnerable have a role and can fully participate to any disaster management and development intervention before and after disasters.

For more than 30 years, the United Nations have advocated that local communities must be considered as full participants rather than mere spectators of the disaster management and development interventions carried out (UNDRO, 1982; IDNDR, 1994; UNISDR, 2005, 2015). Both before and after disasters, local communities must be engaged in any planned intervention to enhance DRR and resilience at the local community level and other levels of society. Before disasters, they must have the chance to be engaged in any planned intervention, and risk management, and/or vulnerability and risk reduction activity in order to learn from disaster risks about the vulnerabilities, risks and impacts that affect their wellbeing, transform, and enact their capacities and knowledge to participate in development and reduce them. After disasters, they must be engaged in any recovery, reconstruction and re-development activity to have the chance to learn about the local vulnerabilities, risks and impacts created by the disaster, and about who are the most vulnerable and most affected. This learning should enable them to transform towards undertaking positive individual and collective actions, and towards taking part within the conception, design and implementation of any disaster management and development intervention.

Concerning post-disaster reconstruction, typically, in the city centres – where houses are close to one another and cannot be restored or reconstructed separately – post-disaster reconstruction necessarily needs the identification and establishment not only of groupings of houses functional to future reconstruction, but more importantly, of groupings of homeowners and inhabitants who must undertake meaningful collective actions to rebuild their damaged neighbourhoods that constitute the vitality of a village or a city, or of an affected landscape. Even for the reconstruction of a single building with multiple apartments, homeowners, and inhabitants, taking collective action is necessary to rebuild the damaged building.

From a DRR and a resilience perspective, during any collective action or planned intervention, recognizing, engaging, and strengthening the cognitive and interactional capacities of local homeowners and inhabitants to learn and transform (i.e. community resilience) are crucial to building back better not only housing and infrastructure but more importantly, sustainable and resilient communities. After disasters, local communities undertake the majority of work and have the best understanding of what is needed and where. An adequate community participation approach should ensure that appropriate recovery and reconstruction interventions will only be implemented “if they meet the priorities identified with and by the affected population, requiring affected populations to be involved in decision-making (IFRC and OCHA, 2010, p.xvii).
Overall, a crucial shift in how community participation is carried out in disaster management and development practice should be made to enable effective community resilience-building strategies. This shift is similar to the shift advocated in the institutional strategy and must be from the “consult-command-and-control” approach to a “coordination and co-management” approach to local resources (e.g. financial resources, natural resources, the built environment and associated land use, environmental, social protection, and planning approaches). While the former envisages the participation only of local leaders and influential building firms and professionals, and perceives local communities as being unable to act and in need of being protected (and controlled), the latter approach (coordination and co-management) must envisage effective community empowerment systems capable of engaging not only local political leaders, but a broader constituency of local communities (e.g. the academia, science foundations, NGOs, private companies and other formal and informal groups and local experts) in open and inclusive sustainable knowledge systems (i.e. see Chapter 5 and below).

What can be learned by disaster studies, development studies, and impact assessment field?

Enhancing DRR and resilience and achieving the SDGs requires a closer link between the scientific knowledge production processes and local action. This demands that scientific practices in the fields of disasters, development and impact assessment should become more oriented towards the societal arenas in which sustainability problems, including social risks and impacts, are tackled. Understanding knowledge through the concept of knowledge systems helps in visualising how these disciplines and scientific practices can and should support societies to address community resilience and desired social development outcomes (i.e. social sustainability). Knowledge systems are “made up of agents, practices and institutions that organize the production, transfer and use of knowledge” (Cornell et al., 2013, p.61). While Science is a necessary element of a knowledge system, on its own it is not sufficient to bring knowledge systems into action. Cornell et al. (2013, p.61) argue that “relationships within knowledge systems shape the flows of knowledge, credibility and power within those systems” and, consequently, the effectiveness of any actions that are undertaken. From a sustainability perspective, a knowledge system is “a network of actors connected by social relationships, formal or informal, that dynamically combine knowing, doing, and learning to bring about specific actions for sustainable development” (Cornell et al., 2013, p.61).

By being problems that affect societies at all levels, enhancing DRR and resilience and achieving the SDGs demand the scientific practices in these fields to enact social learning processes where the more the members of society are included within the knowledge system, the more people can better know, act, learn and transform to orient any planned intervention towards building resilience at all levels of society, and achieve desired social development outcomes and the SDGs. The common purpose of addressing these issues demands opening-up knowledge systems at multiple levels of social organization to allow a broader constituency to participate in knowledge production, the implementation of actions, and in learning and transforming towards better future social development outcomes. At the core of knowledge systems oriented towards sustainable development should be enhancing DRR, resilience and achieving SDGs. This demands the co-production of a transdisciplinary, transformative, and integrated knowledge about the multiple dimensions of local community wellbeing, impacts, vulnerabilities, capacities, risks and resilience which should inspire the processes of deciding, conceiving, designing and implementing together local vulnerability, risks and impacts reduction-activities. All this should be oriented towards enhancing the multiple dimensions of local community wellbeing and capacities to turn vulnerability and risk reduction activities into opportunities to achieve social development outcomes and build resilience at all levels of society.
A sustainable knowledge system for the governance of any local disaster management and development intervention would be one where different actors share empathy, social responsibility and care towards reducing local vulnerabilities, and the most vulnerable, and towards enhancing DRR and resilience and achieve SDGs, while building a glocal culture of resilience also through strengthening local capacities, local knowledge, mutual aid and cooperation, togetherness, brotherhood, sense of community, sense of place and sense of risk. Such a sustainable knowledge system should thus enable inclusive social learning and transformation oriented towards reducing the negative impacts of likely future crises and disasters and strengthening the resilience of the local landscape and the communities of place living within, thus turning an affected local landscape into a landscape of affect (see Figure 10.15).

Figure 10.15: Sustainable knowledge system in local disaster management and development governance
Source: This Paper (based on Sharpe, 2016)
Such a sustainable knowledge system should be built at the central level and at the peripheral level. At the central level, a sustainable knowledge system should be the societal arena of cooperation and co-management of all the activities carried out within an affected landscape. At the peripheral level, there should be a sustainable knowledge system for each planned intervention implemented. While the first provides general orientation at institutional, financial, and planning levels, the second are specifically oriented towards assessing the vulnerabilities, risks and impacts that need to be reduced by the specific planned intervention carried out. Ideally, in every affected landscape, there should be a sustainable knowledge system at the central level and multiple sustainable knowledge systems per each community of place and each planned intervention.

Recently, governance emerged in the literature as a concept that recognizes the roles and functions of a diverse set of actors in managing socio-ecosystems (Tengö et al., 2014; Bakema et al., 2017). Beyond governmental institutions, these actors also include private sector and civil society entities (Parra and Moulaert, 2016). From an analytical perspective, the term governance helps in better framing those functions formerly carried out by public entities that are now dispersed among diverse actors at different scales of society (Tierney, 2012). From a social-ecological systems point of view, the governance construct aims at better understanding the interplay between these different sets of actors and their living environments, and how this interplay influences their wellbeing and their way of living and prosperity.

As conceptualized, the SIA Framework for Action contributes to improving governance and implementation of any disaster management and development intervention in any affected local landscape, leading to sustainable knowledge systems that would enhance social learning and transformation and strengthen local community resilience, thus building a glocal culture of resilience at all levels of society (see Figure 10.15).

What needs to be transformed in these fields?

Although not yet fully implemented in practice, DRR and resilience have prompted a shift in disaster management thinking from ‘managing disasters’ to ‘reducing disaster risks’ (IDNDR, 1994; UNISDR, 2005, 2015; Coppola, 2015). This shift in thinking has led to two major changes in the way disaster management should be perceived: from ‘top-down disaster response’ to ‘social learning and transformation’; and from a ‘top-down culture of social protection’ to a ‘glocal culture of resilience’. In order to integrate DRR and resilience into development policies, plans and projects, the shift from managing disasters to reducing disaster risks that has occurred in disaster management should inspire a similar shift in development thinking from ‘managing development’ to ‘reducing the risks of development’; and, correspondingly, in impact assessment from ‘managing impacts’ to ‘reducing the risks’ of planned interventions.

Congruent with the philosophy and process of SIA, This PhD research is intended to be an inter-disciplinary, transformative, practice-oriented, social scientific contribution to the broader discourses on disaster management and sustainable development and to the scientific fields of: rural sociology, sociology of disasters, anthropology of disasters, SES, NRM, SIA and impact assessment generally. It seeks to bring these disciplines together to improve understanding of resilience in society and to consider what role SIA can play to enhance planned interventions, build resilience at all levels of society, and meet the 2030 Agenda.

Below I conclude this Chapter by reporting what was outlined in Chapter 9 as being the main challenges at the scientific, institutional, and socio-cultural levels that still hamper disaster management, development and impact assessment to build sustainable knowledge systems and strengthen resilience at all levels of society.
Disaster studies, development studies, and the impact assessment field can greatly contribute to enhancing understanding of how to build resilience in society. However, there are still three major constraints that undermine all science practice intended to be co-produced and transformative at the local level and that contribute to building resilience at all levels of society (discussed below). The SIA Framework for Action presented in this PhD thesis challenges such constraints, thus aiming at fully liberating the potential role Science can have to contribute to building resilience and sustainability and achieving the SDGs.

**Overcoming main constraints at the scientific level**

A few days after the public announcement (3 June 2010) of the legal proceedings against the Italian state and the scientists of Italian Major Risk Commission (see Chapter 5), almost 5,000 scientists around the world signed a letter produced by the Italian National Institute of Geophysics and Volcanology (INGV), which was sent to the then Italian President, Giorgio Napolitano (Nosengo, 2010). In that letter, the scientists agreed with the INGV in calling the allegations “unfounded”, because there was no way the MRC could reliably have predicted an earthquake (Cartlidge, 2012). The American Geophysical Union and the American Association for the Advancement of Science (AAAS) also issued statements in support of the Italian defendants. In an open letter to the Italian President, the AAAS said it was ‘unfair and naïve’ of local prosecutors to charge the men for failing ‘to alert the population of L’Aquila of an impending earthquake’ (Hall, 2011, pp. 265-266). Some months later, however, two scientists (one being the Chief of the Russian Academy of Science) further investigated the topic and found out that the precise terms of indictment were different to those being simplistically broadcast by the media and the INGV letter (Alexander, 2014; Gabrielli and Di Bucci, 2015; Alexander, 2015). These two scientists were right, the local persecutor’s concerns actually were rather different as Hall (2011) outlined:

“Picuti (the local prosecutor) says that the commission was more interested in pacifying the local population than in giving clear advice about earthquake preparedness. "I'm not crazy," Picuti says. "I know they can't predict earthquakes. The basis of the charges is not that they didn't predict the earthquake. As functionaries of the State, they had certain duties imposed by law: to evaluate and characterize the risks that were present in L’Aquila." Part of that risk assessment, he says, should have included the density of the urban population and the known fragility of many ancient buildings in the city centre. "They were obligated to evaluate the degree of risk given all these factors," he says, "and they did not" (Hall, 2011, p.266).

This failure in understanding the precise terms of the L’Aquila trial (see Chapter 5) relates to a number of political and scientific issues that still undermine the full potential of scientific practices to contribute to sustainable development, build sustainability in society, and meet the 2030 Agenda. A main scientific constraint primarily relates to how scientific knowledge concerning risks is produced in society. Current approaches in risk assessment confine risk to simply being the relation between probability and consequence of a hazard, and only focus on the technical and physical characteristics of the hazard (Kemp et al., 2016; Esteves et al., 2017). This approach fails to acknowledge the broader social context in which risk is constructed, and the differing values of people, especially between the local community and those assessing the risks. Traditional risk assessment does not adequately consider the costs to communities living with risks, which may be acceptable to the business but not to communities (Esteves et al., 2017).

Conversely, social science approaches to risk do consider qualitative factors, such as individual and collective perceptions about vulnerabilities, capacities, the hazard, its likelihood, and the social construction of risk (Mahmoudi et al., 2013; Esteves et al., 2017). However, there are still limitations in how risks are conceptualised (Franks et al., 2014; Esteves et al., 2017). The assessment of risks within impact assessment must be further enhanced to better understand and recognise how the vulnerabilities, capacities and resilience of local communities influence risk, and how social risks, such as inequity, social exclusion, and inequality, represent the local root causes of disasters and the structural dynamics that characterise pre-disaster vulnerability.
From a DRR and resilience perspective, understanding the risks of development and how to reduce them at the local level should be a transformative knowledge co-production process the scientific community should build together with affected local communities to pursue socially sustainable transformation. Through the co-production of this knowledge, external actors can gain a better understanding of what is needed to reduce local vulnerabilities and associated risks and impacts, while local communities are able to fully participate in the development, mitigation and monitoring activities.

The SIA Framework for Action introduced in this thesis has the potential to co-produce transformative knowledge concerning local vulnerabilities, risks, impacts, assets and capacities together with local communities. Rather than being technical advice produced only by experts, the knowledge produced by the SIA Framework for Action is meant to enhance inclusive social learning, empower socially-sustainable transformation and strengthen resilience at multiple levels of social organization (see Chapter 4). It includes a new approach to risk, based on local knowledge, beliefs, values, narratives, vulnerabilities, needs, desires, capacities, and individual and collective coping strategies. This leads external actors and local communities towards building a common vision about reducing the vulnerabilities and the local root causes of disasters, and enhancing local wellbeing, capacities and resilience. The knowledge co-production process enacted by the SIA Framework for Action is transparent and accountable, and it ensures equity, inclusiveness and fairness, and enable deliberativeness. This leads external actors (including scientists) and local communities to build a glocal culture of wellbeing and resilience, which will inspire the building of sustainable knowledge systems. This will also orient the institutional and financial strategy, the physical planning, community participation and risk management approaches adopted in the governance of disaster management and development and the coordination and co-management of planned interventions towards building resilience at all levels of society, and achieving the SDGs.

Overall, full application of the SIA Framework for Action demands a crucial shift in perceiving the knowledge about risks, from being considered as a source of collective anxiety to be considered as an opportunity to enhance inclusive social learning, empower socially sustainable transformation and build resilience at all levels of society. All this is necessary to overcome main constraints at the scientific level.

**Overcoming main constraints at the institutional level**

A change in how Science, including disaster studies, development studies and Impact Assessment, perceives and performs its institutional role is needed so that it is not merely a legitimation device for pre-determined projects, but a process that leads the coordination and co-management of disaster management and development interventions towards achieving the SDGs. The SIA Framework for Action requires Science be effectively enabled to contribute to the governance of any planned intervention towards building resilience and social sustainability at all levels of society. Effective institutional arrangements should enable science to ensure that the co-production of knowledge occurs in a common societal arena leading to a shared community vision and mutual agreement between the local community and external actors (i.e. decision-makers, investors, proponents) on: (i) the goals and priorities to be established and achieved, (ii) the local vulnerabilities and root causes to reduce, (iii) the capacities to enhance, and (iv) the methods, procedures and actions (mitigation, monitoring, enhancement and prevention) to be used and implemented. Effective institutional arrangements should also guarantee that this common arena is open to a broad constituency of society to ensure inclusive learning, transformation and deliberativeness and strengthen community resilience (Imperiale and Vanclay, 2016b).
Overall, a crucial shift from the traditional use of emergency powers and command-and-control to a coordination and co-management approach to resources (e.g. financial resources, natural resources, the built environment and associated land use, environmental, social protection and planning approaches) is necessary to overcome main constraints at the institutional level.

**Changing the social-cultural role of Science**

A change should occur in how science, including disaster studies, development studies and Impact Assessment perceives its social and cultural role in society. As noted by Esteves et al. (2017, p.75) “the dominant approach in risk assessment is to give priority to consequence to the business” and to consider irrelevant the analysis, management and reduction of local vulnerabilities and social change processes that may worsen the risks of development for local community wellbeing. As suggested by the SIA Framework for Action, Science understands the risks of development and co-produces transformative knowledge should be oriented to understand the vulnerabilities and risks development may produce on the wellbeing of local communities.

Among the social risks that are often neglected by Impact Assessment practice are, for example, inequity, social exclusion, elite capture, infiltration of organized crime, disaster capitalism, and corruption. The result of the lack of consideration of these social issues is that funds are often spent on poorly-planned interventions whose meaning and implementation are captured or distorted by national and/or local political and economic elites. Planned interventions funded by national or international funding schemes are often imposed on sub-regional territories with limited accountability in relation to the money spent, the local actors engaged, and the social and environmental impacts created. Because of the lack of any culture of sustainable development, or of any coherent formal assessment or evaluation procedure or participatory process, post-disaster and development interventions often create widespread discontent and mistrust among local communities. They often increase inequities and social vulnerabilities within the area of intervention, and they fail to reduce disaster risk, or enhance cohesion and resilience at all levels of society (Imperiale and Vanclay, 2019b). As suggested above when discussing how SIA can enhance community resilience, to address these challenges, Science should elaborate new effective tools to prevent elite capture, corruption, organized crime and disaster capitalism from flourishing at the local, national and international levels during any planned intervention. It should radically change its perception about the role it plays in society.

Overall, by building a common vision and co-producing transformative knowledge with local communities as suggested by the SIA Framework for Action, science can have the potential to contribute to building a glocal culture of resilience at all levels of society and achieve the SDGs. It can bring the wellbeing of local communities, their vulnerabilities, needs, desires, capacities, and resilience back to the core of any disaster management and development intervention. It can help any disaster management and development effort better understand, recognize, engage and empower local community resilience, build a glocal culture of resilience and enhance social learning and transformation at all levels of society. Overall, a crucial shift should be made in the culture that accompanies any planned intervention, from bringing about a global culture of disaster capitalism to building a glocal culture of resilience and a public ethic towards local vulnerabilities and the most vulnerable, and towards the role, capacities and resilience of local communities in a global risk landscape.