

## Assessment and recommendations

### Resilience and long-term regional development

On 6 April 2009 a large part of Abruzzo, Italy, was hit by a devastating earthquake (magnitude 6.3). The area affected amounted to 10.8% of the population and 22.2% of the region's territory, and the epicentre was in L'Aquila, a city of about 70 000 people and the capital of the region. The earthquake was a devastating shock to the region, killing 309 people, destroying the historic city centre of L'Aquila and tearing the social and economic fabric. After such a disaster, what does a region do to recover and to move on to become even stronger than before?

Abruzzo is a relatively low populated region of 1.3 million inhabitants, lying at the north edge of the Italian *Mezzogiorno* area (southern Italy), a macro-region that since the 1950s has received national and European support due to its persistent economic underperformance. Among the regions of the *Mezzogiorno*, Abruzzo was already the most developed in the 1950s and still has the highest *per capita* income. However, in the decade prior to the 2009 earthquake, its economy was slowing down. During that period its growth rate was lower than that of the rest of Italy and the OECD area; unemployment has increased and by 2011 the unemployment rate was up to 8.5%, a value higher than the national and OECD averages.

The magnitude of the shock of the earthquake, the economic and institutional effects it has provoked, and the previous state of the regional economy, make the case of Abruzzo particularly interesting for addressing a question which is of general relevance for all post-disaster regions, namely the resilience of regional systems. The resilience of a regional system is here defined as the ability to withstand, and to recover from, external, adverse shocks through adjustment processes that re-establish or enhance the previous state of the system. It follows that a sufficiently high degree of resilience is essential to maintain or enhance the long-term well-being in places that are exposed to the threat of natural disasters, the occurrence of which can abruptly force a re-allocation of resources and demand a shift towards a new development model.

This report also addresses the question of building resilience, which means to help a community to become less vulnerable to external shocks, so as to achieve a better long-term standard of living. The resilience of a regional system certainly depends on the capacity of private agents – households and firms – to conceive and implement appropriate adjustment strategies. Yet the role of public authorities, in particular their control over budgets and institutional development, is also of the utmost importance. Consequently, the resilience of a regional system deeply depends on the quality of how both the public and private sectors respond to social or natural shocks. And, as this report strongly emphasises, policy responses to natural disasters require an appropriate governance system based on community engagement and participation, in order to address their complex and long-lasting redistribution effects.

A natural disaster has, by definition, a territorial impact, destroying or damaging the physical capital of a place and its social fabric. Yet natural disasters rarely remain confined

within the boundaries of the place in which they happened. Any response to disaster requires the resources, capacity and organisation of both regional and national actors. As such, investigating the degree of resilience of regions at risk of a natural disaster, or after one, requires a place-based approach to policy.

Like most natural disasters, the 2009 earthquake had a specific regional dimension. Abruzzo is now a post-disaster region, both from an economic perspective, in so far as the 2009 earthquake destroyed a significant part of its physical capital and economic processes, and an institutional one, since regional governments in Italy have the responsibility to assess and counterbalance the local impact of social or natural shocks by relying on their own financial and organisational resources. Even if the physical and economic reconstruction of L'Aquila and all other municipalities affected by the earthquake is to be carried out also with the support of the central government, the amount of financial and organisational resources required to restore Abruzzo may turn out to be substantial. This will affect the entire economy of the region. From this view it is justified to describe the entire Abruzzo region as a post-disaster region and not to confine this definition to the area directly affected by the earthquake.

This report addresses four issues that are critical when building the resilience of a post-disaster region:

- First, there is the question of sharing the social cost of the natural disaster between the local, regional and national levels. The complexity of this issue depends on the strength of the shock as well as the institutional framework of each country. In the case of Abruzzo, for instance, and differently from previous earthquakes which have occurred in Italy in recent decades, a large historic city centre of exceptional architectural and historical value was destroyed. Private and public actors are confronted by one of the most difficult physical reconstruction efforts in Italy in a century. This is a task that goes largely beyond the financial and organisational capacity of the Abruzzo region, and many other OECD post-disaster regions also face this problem of being overwhelmed by the scale of their disasters, greater than their own capacity to respond.
- Second, there is the question of the overall net effect on the competitiveness of a place affected by a natural disaster. Indeed, the physical and economic reconstruction policy may profoundly change the economic incentives that were rooted in the place. National and regional governments need to identify and implement new frameworks to enable improvements to existing firms and to attract new enterprises and jobs to support recovery.
- Third, there is the question of affected regions whose economies were already struggling before the natural disaster. In this case, a natural disaster may be the catalyst to understand which strategic choices are available to break with the historic development path and ultimately to regain economic growth.
- Finally, since the full recovery from a natural disaster will take time, policy makers should also identify the actions with the greatest potential of having a rapid impact on the economy and society as the region attempts to recover.

There is a large literature base in the disaster studies field that deals with issues relating to the trauma experienced by communities in the wake of natural disasters (Benson and Twigg, 2007; Rodriguez, et al., 2007); these matters are well beyond the remit of this report, however. Similarly, this report does not deal with matters relating to physical reconstruction or rebuilding. Rather, we identify good practices for policy making in the wake of a disaster for long-term development, particularly for regions already facing economic challenges. The

report also discusses ways in which such regions can get back on a track to growth after a significant shock.

Finally, the external shock discussed in this report is that of a natural disaster. Different regions across the OECD, and beyond, are susceptible to different forms of natural disasters: earthquakes, cyclones, floods, hurricanes, forest fires, water shortages, drought or other. However, many of the governance and strategy issues discussed in this report also provide powerful lessons for regions that are not particularly susceptible to natural disasters, but are potentially vulnerable to other kinds of shocks. This includes regions that are vulnerable to the major economic shocks associated with globalisation, such as the closure of large factories, the collapse of local production systems or the loss of trade opportunities. OECD countries will find in this report many lessons for helping regions to cope with external shocks that are well beyond the capacity of the local administration to control. Eight guiding recommendations for building resilient regions after a natural disaster are presented in Chapter 7.

### The Abruzzo earthquake of 2009

The earthquake of 6 April 2009 hit the regional capital L’Aquila and other 56 small towns in the centre-west part of the Abruzzo region. It encompassed an area (*cratere*) of about 22% of the total regional surface. The earthquake caused 309 deaths; additionally, around 67 500 of the 140 000 people living in the area were displaced. Most of the damage was concentrated in L’Aquila, which alone counts for half of the population of the *cratere*.

Thirty-seven thousand buildings were damaged, of which 1 000 were public buildings, 2 000 were of historic or architectural value, and the remaining 34 000 private establishments. The renowned historic centre of L’Aquila was severely damaged and its reconstruction has proven difficult. Around EUR 3 billion was spent on the emergency relief in the aftermath of the earthquake and an additional EUR 8 billion has been allocated for the physical reconstruction of private and public buildings. Additional costs in the form of fiscal advantages, tax waivers and other services are also forecast.

## Social and economic assessment of Abruzzo

The 2009 earthquake heavily damaged 57 municipalities, including L’Aquila. More than 67 000 people were displaced and 37 000 buildings damaged. Around EUR 3 billion were spent on emergency relief and an additional EUR 8 billion have been allocated for the reconstruction of private and public buildings.

In addition to the economic impact of the earthquake, there have been four important changes in the economic and institutional context in which Abruzzo has operated in recent years:

- First, starting from 1999 the Abruzzo region is no longer entitled to receive the large amount of national and European aid linked to the European Cohesion Policy for “Objective 1” regions that had shaped its earlier strategic behaviour, and, consequently, its economy and quality of life in previous decades. The reduction of money available for investment and public incentives has radically modified the location advantages that had fostered exogenous and endogenous economic growth in the past, and promises to mark a new phase in the economic history of this region.
- Second, since the 2008 global economic crisis the financial resources available to Abruzzo’s local authorities have been sharply reduced by the stabilisation policy put in

place to fund the Italian public debt. The constraints on public spending also impact budget re-allocation measures between policy areas with differentiated effects at the local level.

- Third, during the 2000s, the Italian economy was characterised by stagnation, which has adversely and significantly influenced the economic performance of Abruzzo by reducing its domestic demand. Along with most European economies, there is no expectation of a significant increase in the growth rate of the Italian economy in the near term.
- Fourth, the increased internationalisation of the European and Italian markets that has followed the introduction of the EU single market and of the common currency has put further pressure on the local economy of Abruzzo, and particularly on its manufacturing sector, by changing its competitive base. This is an issue of great relevance for a region that, as a result of the public incentives provided since the 1950s, hosts a number of multinational manufacturing enterprises. These firms tend to evaluate the location advantages of their operations in a global context, and this has a major impact for the small and medium-sized firms in the traditional manufacturing sectors.

The consequences of the institutional, economic and natural shocks briefly described above need to be taken into account when investigating the Abruzzo region's resilience and its long-term development trajectory. Indeed, Abruzzo has to confront the four main threats arising from the long-term effect of the economic crisis and the 2009 earthquake.

- A shrinking manufacturing sector. Globalisation and increased international competition, together with reduced external aid, are putting pressure on the region's manufacturing base, both in terms of total employment and productivity per worker. As a result, it has been challenging for Abruzzo to maintain or improve upon its current manufacturing performance. This will not easily be offset by the dynamism of the region's other sectors, such as tourism, advanced services, and agriculture, whatever a realistic estimation of their expansion potential in the next decade might be. Indeed, the shrinking manufacturing sector could likely cause further economic decline in Abruzzo.
- Increasing territorial polarisation. Since the 1960s, the Abruzzo region has undergone dramatic polarisation: only 5 out of its 19 "local economic systems" have experienced population growth. The presence of rural and mountainous areas, as well relatively small urban agglomerations, is also a cause of youth outmigration. The most important negative economic outcome of territorial polarisation in a mountain region like Abruzzo is the amount of physical, cultural, ecological, human and relational capital – collectively termed "territorial capital" – that has remained unused and that has therefore started to decay. By disrupting or leaving unused important elements of the local capital, territorial polarisation substantially reduces the potential contribution of agriculture and tourism to the local economy.
- Decreasing attractiveness of urban areas. The large urban areas in Abruzzo, and in particular the reconstructed L'Aquila, should upgrade their energy efficiency and sustainable modes of transport, as safety, vitality and attractiveness are increasingly important factors for people and firms deciding where to live and situate themselves. If a city cannot keep pace with the expectations of residents and visitors in terms of urban quality, its attractiveness will gradually decline and investments and innovation will decline.
- Limited knowledge generation and transmission. Knowledge is central to the economic growth and the development potential of all advanced economies. The most successful regions are those that mobilise all of their local knowledge assets in ways that best drive local and regional development. In particular, human capital investment appears to be one

of the most robust elements supporting growth in all types of regions. Gains in productivity depend on the presence of skilled workers as well as better use of their skills and of the knowledge produced there or elsewhere (OECD, 2011). In order for regions to reach their development potential, it is essential to configure institutional and governance arrangements so that knowledge flows as freely and effectively throughout the region as possible, and also to ensure that the knowledge is used as effectively as possible by all actors. Openness, engagement, co-ordination and co-operation are key features of resilient regional systems.

## **Main recommendations for implementing an integrated regional development strategy in Abruzzo**

The design of an effective development strategy for the Abruzzo region and for the areas affected by the 2009 earthquake requires a new vision for, and rethinking of, the region's potential. The need for such a rethinking arises not only because of the impact of the earthquake but also because of the long and slow downward trend the region experienced during the preceding decade. In this context, Abruzzo needs to focus on local resources to build its development strategy and, at the same time, to increase the openness of the regional system to attract more immigrants, entrepreneurs, students and external capital. This fosters economic development and improves the quality of life. The integrated development strategy presented in this report, therefore, may represent a useful framework for Abruzzo's long-term policy-making process.

This regional development strategy is a single, integrated and holistic framework for action in Abruzzo, made up of four main inter-locking pillars: improve the regional governance system; implement a regional innovation strategy, improve the use of cultural heritage and natural environment, and increase the attractiveness of cities through technologies to deliver quality services. These four pillars have synergies: transparent and inclusive decision making, for example, can strengthen networks between economic actors and help innovation transmission; the natural, cultural and heritage resources of the region are a major asset for producing innovative services; and a major benefit of the "smart city" agenda for cities is to foster governance innovation, by combining technology-led innovation with institutional innovation across the private, public and civil society sectors.

No single pillar alone will produce the desired outcomes, but rather their integrated action offers the best possibilities for development. This holistic approach is also underpinned by the logic that while small individual actions at first appear to contribute little to the overall outcome, a range of small actions and interventions undertaken across a broad front can collectively begin to have a larger impact. Hence the monitoring, reporting and communication of these outcomes is very important for driving progress.

An overall regional strategy should draw on the development strategies of the local economic systems, designed by leading local authorities who have identified their specific priorities and designed implementation strategies at the local level. This report focuses on the local development strategy of L'Aquila and its functional urban area. L'Aquila was dramatically hit by the 2009 earthquake and is one of the places in the region most in need of a long-term development strategy. As stated previously in OECD (2009), this long-term development plan should build upon L'Aquila's knowledge dimension and foster a knowledge-driven, creative, smart and open city as described below.

### ***Strategic pillar 1: Improve the regional governance system***

While the Abruzzo regional government will continue to play a key role in designing and implementing the development policies of the region, new multi-level governance arrangements are necessary to cope effectively with the threat posed by the current economic environment and possible future threats. Changes to the territorial governance system are required in the following three directions:

- Reshape the territorial governance of the region to overcome administrative fragmentation and strengthen the largest functional urban areas.
- Improve the quality of decision-making processes by engaging community deliberation in the definition of regional development strategies.
- Improve the capacity of administrations in multi-sectoral planning, the transparency and accountability of policy making and the dialogue with public and private stakeholders.

Attempts to introduce changes in the Italian legislation concerning the system of local governments and governance were introduced very recently with the aim of reducing the number of municipalities and provinces by integrating the small ones, and recognising the institutional functions of large metropolitan areas (Law 95 of July 2012). Abruzzo should make the best use of this reform to establish more robust forms of governance. Because of the high number of small municipalities in the region, inter-municipal co-operation would greatly enhance the effectiveness of policy intervention in Abruzzo. Similarly, the two main urban areas of Pescara and L'Aquila should strengthen the integration of policies with the surrounding municipalities (their functional urban areas). Reshaped governance would also improve the efficiency of the regional innovation system and the co-ordination with other levels of government.

Improving the regional governance systems means above all upgrading the quality of decision making by turning it into an open, participative, accountable and transparent process. Community engagement can provide reasoned public input in difficult strategic decision making, and can therefore be useful to help decision makers to better understand the multi-dimensional aspects of the problem, identify solutions for the implementation, and ensure that the strategy fits the set of circumstances that people experience. For this reason, open and inclusive decision making should become part of defining a regional development strategy.

The institutional setting put in place after the earthquake, which envisaged the appointment of Commissioners for the reconstruction in addition to the ordinary administrations, was in place for more than three years. Such a long period of governance in the emergency appears to have somewhat hindered the dialogue between institutions and citizens, increasing distrust and preventing effective community participation to the decision-making process. The new governance approach set up by the central government in 2012 has established a clear path of transparency and information regarding the reconstruction that should contribute to restoring civil and social trust and increasing the efficiency of public spending. Such a path should now be supported with the lead of regional and local institutions in producing and disseminating information to all (through for example a centralised website and a one-stop-shop office), and to improve mechanisms for democratic deliberation.

All information produced must be perceived by local decision makers and citizens as being credible, salient and legitimate (Cash et al., 2003), and good communication, translation and mediation must become standard tools for operating in the local context. The use of these tools and open dialogue can best be facilitated by the establishment of local institutions comprised of a range of local stakeholders and citizens, as well as people with professional expertise in these roles who can lead the monitoring and the communication of societal progress.

### **Main recommendations for improving the regional governance system**

**Abruzzo should develop an integrated approach to redevelopment after this natural disaster**, by building on a strategic vision for the region, one that strengthens the dialogue among stakeholders and raises the profile of needed reforms and quality of decisions. The process of decision making should be accompanied by the identification of the conditions for the implementation of the strategy, the actors involved and the different responsibilities. Bearing the social cost of a natural disaster is a burden that largely goes beyond the financial and organisational capacity of the affected region. Therefore co-operation among public-private actors and different levels of government is needed to help the community to rise to a better level than before.

**Abruzzo should exploit the opportunity to redesign the horizontal structure of its governance system**, by designing flexible co-operation schemes for small municipalities and integrate spatial, economic and social interventions in the functional urban areas of Pescara and L'Aquila. This new arrangements would improve the delivery of services in small municipalities, increase the efficiency of the entire region also with regards to the innovation strategy and improve the co-ordination with other levels of government (regional and central).

**Public deliberation should become a regular component of the regional development strategy**. Identify possible channels for democratic deliberation, clarify where the results of the deliberation will be seen, and create also physical spaces for civic participation. International experiences suggest that measuring the key outcomes of a region's strategy, chosen by the community, is critical to monitoring progress, motivating citizens and policy action. Flexible systems of governance prioritise partnership and engagement, and this is crucial for fostering the types of co-operation and collaboration which can help with the monitoring of regional performance and the adjustment of strategies and plans. The aim of all forms of local and regional leadership should be to build a local and regional setting where common purpose and widespread stakeholder engagement over the medium and long-term become the norm.

**Abruzzo should restore trust in public governance, by increasing the accountability of policy making and improving the capacity of administrations**. To start with, efforts should be made to secure the improvement of the accessibility, quality and disclosure of information on reconstruction expenditures, its criteria and timelines. Then resources – skills and funds – should be invested to provide information systems for gathering and sharing key outcomes of the regional development strategy. Targets of accountability, transparency dialogue with private stakeholders and civil society, as well as multi-sectoral planning cannot be achieved without a co-operation pact of all interested actors. Policy evaluation has a decisive role in offering insights on conditions, causalities and bottlenecks for the implementation of policies and in suggesting ideas for how to revise objectives, re-allocate resources and identify the tools to deliver results.

### ***Strategic pillar 2: Implement a regional innovation strategy***

The creation and diffusion of knowledge and entrepreneurial activities is at the core of a development strategy for Abruzzo. Economies which have performed poorly over the last two decades are generally those in which such transmission mechanisms for knowledge have been weak or fragmented, resulting in limited ability to adapt new technologies to the local context (OECD, 2011).

Abruzzo has an opportunity to build on its regional advantages and diversity to support economic restructuring and regional growth. These advantages include the region's manufacturing base, its abundant natural, cultural and artistic resources, and the presence of three universities. However, several weaknesses need to be addressed to avoid decline. The

systemic dimension of the regional productive structure and innovation assets is extremely fragile. The lack of internal and external connectivity is a priority which must be addressed in regional and local strategies through different brokering and collaboration-promoting instruments and institutions. Furthermore, the firm base of many low-technology small and micro-enterprises, including family-owned firms, results in low levels of innovation capacity due to lack of firm scale and skill gaps. Efforts to stimulate the demand for innovations among the region's firms are therefore an imperative. The recent regional development law (July 2012) is an important step to overcome the fragmentation of public and private stakeholders. The previous fragmentation had prevented the identification of a coherent and integrated development strategy and the alignment of objectives and priorities at the various level of governance.

The process of reconstruction of regional advantage should be based on the concept of the regional integrated platform, which should aim to achieve *i*) technological upgrading and sectoral structural change on the basis of *ii*) related variety and *iii*) a diverse knowledge base. This could be achieved through the set-up of an evidence-based policy platform able to facilitate inter-sectoral linkages and knowledge flows across the entire economy.

### Main recommendations for a regional innovation strategy

To improve and restructure the economy, **Abruzzo will need to make targeted strategic priorities and address fragmented governance.** The increasing number of innovation poles at the core of the current regional strategy requires prioritisation based on the most promising avenues for economic upgrading through related variety. Abruzzo Sviluppo, the regional innovation public agency, has been designated by the Abruzzo region as an important public actor for implementing regional actions. Its capacity and networking role should be strengthened to help address the dispersed public governance within the region across different provinces and municipalities. Building on the Abruzzo Development Pact, ongoing strategy guidance from public, private and non-profit actors could also serve to unite regional innovation system actors around the regional goal. Regional efforts will also need to be supported by better data and policy intelligence, to which the regional universities could contribute. The strong strategy and more coherent governance will allow the region to better engage with national policy makers and beyond, such as in the Adriatic Ionian Macro region.

**Regional policy instruments need to cultivate inter-firm linkages among multi-nationals, SMEs and universities; and to upgrade firms that are not innovation-ready.** The various policy tools in place – notably the innovation poles – are oriented in the right direction for supporting a transition through related variety. However, they will succeed only insofar as they are able to ensure strong connectivity and openness. Such connectivity is needed within and beyond the region by developing and strengthening inter-firm and inter-industry backward and forward linkages, and knowledge networks among different types of actors (e.g. business firms, universities, educational system). Universities have a range of opportunities for university-business linkages that can be increasingly tailored to the economic development needs of the region.

To increase employment and make a better use of skills, **the region needs to promote adapted higher education and vocational training that will support better opportunities for an effective use of skilled graduates and workers.** Universities have an important role to play in the regional economy as drivers of economic development, such as the role of the University of L'Aquila for the city, but also as providers of education, training, and research of relevance to regional labour market and innovation needs. Given the education-job mismatches in Abruzzo, both more sophisticated vocational training and more relevant university education are critical. Finally, more efforts are needed to ensure jobs that make use of skilled graduates to retain those formed in the region and attract more.



### ***Strategic pillar 3: Improve the use of cultural heritage and natural environment***

Abruzzo has a particularly rich cultural heritage and attractive natural environment, two elements of territorial capital on which a strategy of integrated and sustainable touristic development can be based. The creation of two large national parks in the early 1990s and the expansion of the existing National Park of Abruzzo was a watershed in the tourist development policy of the region, which became the leading region in Italy with regard to the conservation of natural environment and human landscapes. The subsequent institution of a further two regional parks was another step in this direction. Even if a large number of tourists visit the natural parks and the potential of skiing in Abruzzo mountains is exploited, there is still a very large territorial capital that could be put to better use in the tourism sector.

The territorial capital in Abruzzo is constituted often by small elements (towns, architectural values, rural landscape, etc.) highly dispersed in the territory of the region. This is one of the fascinating features of the Italian Apennines Mountains, and it is particularly evident in the case of Abruzzo. To develop tourism systems formed by small and dispersed elements means to design and implement hundreds of small development projects in a co-ordinated way, as to increase the economic return. This of course adds a measure of complexity for the regional development plan.

There are a number of touristic goods that can be produced or expanded in the mountainous areas of Abruzzo, such as naturalistic tourism, cultural tourism, temporary residence, neo-rural production processes, high quality agriculture, etc. In order to produce high-valued tourist goods and services, organisational efforts are needed to co-ordinate and network the various experiences and the different elements making up the touristic goods (quality of the lands, biodiversity, architectural values, etc.).

#### **Main recommendations for improving the use of cultural heritage and natural environment**

**Abruzzo should develop an integrated plan for its natural environment and cultural heritage that better connects the fragmented small development projects.** Building on the past experiences of conserving its natural environment, Abruzzo should acknowledge the small and scattered nature of its territorial capital, and focus on the social and environmental quality of each local project to develop a sustainable tourism strategy. The territorial specificity of the cultural assets and ecological systems is a challenge to tourist policies in Abruzzo and should be addressed with an appropriate governance mechanism to generate effective policies and actions.

**Abruzzo could produce extremely high quality tourist services on the basis of the existing territorial capital.** Abruzzo should put together the high variety of valuable elements (landscape, architectural values, biodiversity, etc.) to produce marketable tourist products. Even though this may result in a challenging task, it would give Abruzzo a stable niche in the national and international markets.

### ***Strategic pillar 4: Increase the attractiveness of cities through technologies to deliver quality services***

There is a large gap between the actual and potential technological organisation of cities, as only a portion of the vast array of new technologies available is currently applied. The introduction of new available technologies could potentially radically

change: *i*) the energy efficiency and environmental sustainability of a city, *ii*) the provision of private and public services, and *iii*) the learning potential of individuals and organisations. The **smart city** concept emphasises the inter-relationships between new technologies and new systems of activities, organisation and governance. These can be identified, harnessed, and fostered in beneficial ways for social progress. The objectives for a smart city agenda require a specification of the optimal spatial scale at which to apply the smart city concept, whether one focuses on transport, energy, mobility or health-care provision. This report suggests that the smart city agenda should refer to the main functional urban areas of the region.

There is no single template for a smart city. Different places are experimenting with different approaches. In each locality, the smart city challenge is to identify the appropriate social, economic and environmental priorities which the local smart city agenda is designed to respond to, and to identify the best ways to achieve the desired outcomes. The process of policy-prioritisation necessarily involves processes of deliberation between all interested local stakeholders, and such local and bottom-up approaches mean that a smart city vision cannot be imposed from outside. A widespread and strong sense of ownership by the local community is essential for any smart city programme to be sustainable and successful. L'Aquila can use the available resources to adopt smart technologies in the reconstruction and become a benchmark for other cities in the region and in Italy.

#### **Main recommendations for increasing attractiveness of cities through technologies to deliver quality services**

**The main functional urban areas in Abruzzo should pursue a smart city agenda.** Three main pillars could form the backbone of the smart city agenda: *i*) to configure new energy and sustainable environmental management systems; *ii*) to establish information technologies to improve the delivery of health services to the population and the active engagement of seniors; *iii*) to set-up information and communication technologies to improve information flows in the city.

**Governance innovation should be encouraged to better design and implement a smart city programme.** Smart systems generally imply new modes of co-operation, because they span traditional sectoral, institutional or jurisdictional arenas. They also combine technology-led innovation with institutional innovation across the private, public and civil society sectors. Such innovation will reshape the information flows in the city, responding more effectively than in the past to the community's needs and demands.

### **L'Aquila as a paradigm for local and regional policy**

As outlined above, the report recommends a regional strategy based around four main components. There is a regional dimension to the recommendations, since their implementation is expected to have an impact on all places in Abruzzo, albeit to varying degrees, depending on each area's specific qualities and socio-economic structure. Abruzzo, for example, has a territory which is highly fragmented in administrative terms and markedly differentiated in economic and social terms. Therefore each locality, besides understanding how the regional strategy would impact on its territory, should also identify development strategies on the basis of its specific trends and assets. The regional development strategy would then be generated by the mutually beneficial interaction of regional and local policies.

In the case of L'Aquila the development strategy proposed in this report is built around the vision of the “city of tomorrow” or “L'Aquila towards 2030”. Such a vision could turn into a set of policies and interventions leading the city of L'Aquila to fulfil the ambitious objective of becoming a city with a very high quality of life by 2030. The quality of life is interpreted as correlated both to the well-being of the population and as a critical factor of attractiveness and economic success in a globalised world.

L'Aquila can serve as a model for 21<sup>st</sup> century living in the Abruzzo region and Southern Italy: a place which builds on, links to, and celebrates its heritage, its culture, its environment, and its science and technology, and does so with the express intention to involve all of society in the creation of high-quality living for future generations. L'Aquila can become a “living laboratory” of how a community can come together to engage in the re-design, the re-thinking, and the re-launching of its own future. Such a strategy for L'Aquila is encapsulated around four components: **knowledge-driven, smart, creative and open city**.

### **Main recommendations for L'Aquila as a knowledge-driven, smart, creative and open city**

**L'Aquila should aim at becoming a university city** by raising the share of resident students, turning the University of L'Aquila into a key pillar of the local economy in terms of employment and income generated. There are solid grounds to set this ambitious goal for L'Aquila. Before the earthquake the university was highly regarded in the natural sciences, the applied sciences, and engineering. Moreover, the presence in the city of the world-renowned Gran Sasso National Laboratory and the newly launched inter-disciplinary Doctoral School Gran Sasso Science Institute – significantly add to the academic reputation of L'Aquila as a place of higher education and research. Strengthening the links between research centres and firms is also a priority.

**L'Aquila should aim to become a smart city**, configuring sustainable environmental systems; adopting ICT technologies to deliver local services and improve the information flow in the city. L'Aquila could become a laboratory of innovation and promote demonstration effects for the region and other cities.

**L'Aquila could rapidly become a creative city** that fosters cultural life and commercial offering to creative investors and entrepreneurs (art, design, media, marketing, advanced engineering solutions, restoration, etc.). The physical reconstruction of the historic centre will offer the opportunity to attract highly skilled labour able to command advanced technologies and specialised knowledge. The university can play a major role in driving a creativity-led local and regional development agenda by connecting more with the civil society, the private sector and other public sector organisations. Along with the university, other relevant cultural institutions already established in the city – such as the Academy of Art, the Music Conservatory and the outstanding theatrical tradition – all provide great potential for re-establishing L'Aquila as a creative city, in which the applications of knowledge, research, design and development all underpin local economic activities.

**To develop a lasting recovery in L'Aquila, community engagement and deliberation should be supported.** When communities affected by a natural disaster are allowed to embark on a participatory process, this facilitates a lasting recovery as the complex redistribution effects of the disaster will be addressed. L'Aquila could develop a participative well-being index to publicly monitor progress of society and accomplishments of results beyond the recovery period.

## Methodology of the study and structure of the report

This OECD study was undertaken at the request of the Department for Development and Economic Cohesion in the Ministry of Economic Development (National Operational Program “Governance and Technical Assistance ERDS 2007–2013”), following previous work carried out in the aftermath of the 2009 earthquake for the re-launching of a sustainable development agenda for L’Aquila (OECD, 2009). The OECD work was carried out in collaboration with a group of ten academics from six countries and three additional external experts from two other countries, all co-ordinated by the University of Groningen, who received a request for the study from the Regional Business and Unions Associations (*Confindustria*, *CGIL*, *CISL* and *UIL*). During the period of the study a Steering Committee was established, comprising the two institutions that requested the report and representatives of regional and local administrations. Preliminary results and progress of the report were discussed during the five meetings of the Steering Committee.

This report offers proposals to improve sustainability of the local economy and provides strategy options for the region to both recover from the disaster and emerge stronger than it was before. The study not only assessed the views of various stakeholders, but also aimed to build the strategy as a collective good, mirroring the variety of stakeholders’ perspectives. As such, some of the research team’s proposals were discussed through local public debate and reformulated, before being disregarded in some cases or receiving support from the local community in others. Different methods were employed to ensure a participative process:

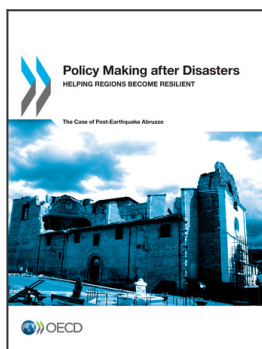
- More than fifty face-to-face interviews were undertaken with national, regional and local institutions, civil society, firms, business and trade-union organisations.
- Two participatory events to gain a sense of local priorities from the perspective of the community and building commitment to change (16 March 2012; 6 July 2012).
- A public forum “Abruzzo Towards 2030: On the Wings of L’Aquila” (17 March 2012) attended by more than 300 people representing local and regional institutions, including the President of the Abruzzo region and the Mayor of L’Aquila, the Head of the University of L’Aquila, the business sector and civil society. The forum discussed priorities for a regional development strategy and the rebirth of L’Aquila after the 2009 earthquake on the basis of an issues paper prepared by the research team (OECD and the University of Groningen, 2012). The forum was chaired by the national Minister for Territorial Cohesion and concluded with comments by the Italian Prime Minister, Mr. Mario Monti, together with the Minister for Research, Education and Innovation, and the Minister of Interior. Guest speakers from Japan, New Zealand, Turkey and the United States shared their experiences of redevelopment of regions after a natural disaster. The forum has helped to create a strong momentum for change.
- A workshop on “Firms’ Networks, Skills and Competences: Linkages between Universities, Research Centres and the Business Community” was hosted by the University of L’Aquila. (5 July 2012) The workshop discussed conditions, actors and instruments for a long-term economic development strategy in Abruzzo with representatives from the University of L’Aquila and University of Teramo, Gran Sasso physics laboratories, main representatives of firms, and regional authorities in charge of regional innovation strategy.

- A community survey in L’Aquila to collect information regarding the perceived knowledge of and participation to post-earthquake reconstruction choices; long-term expectations for jobs and quality of life in the rebuilt L’Aquila; and the strategic choices for the development of the region (June and July 2012).
- A survey on public governance targeted at central, regional and local administrations responsible for those policy areas that are considered as bearing significant potential for local and regional development (February 2012).

The report is structured as follows: Chapter 1 provides a description of the economic and social performance of the region, its territorial organisation and the challenges ahead. Chapter 2 describes the integrated regional development strategy for Abruzzo and the governance system needed for its implementation. Chapter 3 provides a description of democratic deliberation processes undertaken to support development strategies in post-disaster regions. Chapters 4, 5 and 6 detail the policy actions of, respectively, the regional innovation strategy, better use of cultural heritage and natural environment, and the development strategy for L’Aquila. Finally, Chapter 7 outlines lessons for policy making in post-disaster regions. These lessons provide a guiding framework to monitor experiences and good practices for policy making after a natural disaster.

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