

BOX 1

THE POLICY OF RECONSTRUCTION AND REDUCTION OF SEISMIC RISK IN ITALY

A Brief History of recent earthquakes

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From a geological point of view Italy is a young and dynamic country; this explains why almost all of its territory is characterised by seismic hazard, at different levels. Not only that of *hazard* but other indicators determine the seismic risk: *vulnerability* (of structures, buildings and towns) and *exposure* (functions and numbers of occupants). The Italian urban system shows a very high level of vulnerability, due to both its high urban density, a diffuse historic heritage and the weakness of prevention and safety goals in urban planning. As an example, the damages provoked by earthquakes in Italy are statistically much greater compared with what happens in other seismic areas like California or Japan; the earthquake which struck the two Central Italy regions of Marche and Umbria in 1997, caused the same level of damage as the Californian earthquake of 1989, where the seismic event had been much more violent. A brief history of the main earthquakes in Italy in the last fifty years underlines the lack of a useful and effective national legislative framework to address the problem. The point is that national policies have always been focused on emergencies and on reconstruction rather than on prevention, that

is to say, following an event rather than trying to prevent its worst effects. As a matter of fact, each strong earthquake has brought the production of many laws for reconstruction, without creating a systematic framework of policies and tools for prevention.

Only with the national Law 77/2009, originated after the tragic seismic event in the town of L'Aquila, have some steps been taken in this direction. This Act provides for a national plan for the mitigation of seismic risks and it should be implemented at regional and local level through specific tools directed to defining local levels of seismic hazard (geological micro zoning analysis) and to improve urban and territorial capability for emergency management.

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MAIN EARTHQUAKES IN ITALY IN 20TH CENTURY AND THEIR CONSEQUENCES ON THE SEISMIC RISK POLICY

Date	Epicentral area	Magnitude	Victims	Law and policy
1907	Calabria	5.9	167	1907: First Anti-Seismic Act It is not a systemic intervention and it does not define urban planning criteria. Concerning constructions, it only considers the proportion between the street' width and the building height. From the geological perspective, the Act is very general and suggests paying attention to the buildings close to slopes, or in areas susceptible to land instability.
1908	Reggio Calabria Messina	7.2	85.926	
1910	Irpinia Basilicata	5.9	50	
1915	Abruzzo	7.0	32.610	
1917	Val Tiberina	5.8	20	
1919	Mugello	6.2	100	
1920	Garfagnana	6.5	171	
1930	Alta Irpinia	6.7	1,401	
1930	Senigallia	6.9	18	
1962	Irpinia	6.2	17	

MAIN EARTHQUAKES IN ITALY IN 20TH CENTURY AND THEIR CONSEQUENCES ON THE SEISMIC RISK POLICY

Date	Epicentral area	Magnitude	Victims	Legislative improvement for seismic risk reduction	Laws for reconstruction (content and form of management)
1968	Valle Belice	6.1	296	L. 64/1974 and DM 40 /1975 set some technical measures about constructions but does not establish any standards to define seismic areas	The reconstruction process of areas struck by earthquake had a Central management (State)
1976	Friuli	6.4	965	L.336/76 implemented the existing anti-seismic regulations. At the time, the concept of prevention from seismic risk was not part of the public/political debate. "Prevention" was mostly used for emergency problem-solving and civil protection	The reconstruction process was managed by regional administrations
1980	Irpinia Basilicata	6.9	2734	According to L.741/81, regions provide rules within general planning instruments and the related implementation tools, as well as criteria for the definition of plans in accordance with the seismic risk prevention. In 1986, two important legislative measures were added: Technical Standards for construction in seismic areas + Recommendations for intervention on monuments in seismic zones (by the Ministry of Culture)	The funds for reconstruction have been used to try to activate processes of development, although outside the programming or planning tools. The number of areas which benefit from forms of aid increased
1997	Umbria -Marche	6.1	11	The reconstruction Law 61/98 prescribes: - analysis of seismic micro-zoning in the affected sites, in order to evaluate the degree of hazard and to define technical rules for construction. - a model of damages-survey for buildings (ordinary and strategic) has been implemented for the emergency phase	With the 61/98 Regions managed the reconstruction process: they arranged the complex framework of damages and the related needs/requirements. Moreover, this Act prescribes criteria for planning that should be implemented by local authorities through recovery programs
2002	Molise-Puglia	5.8	30	Updating the map of seismic risk at national level (4 levels). An Ordinance (3274/03) requires the seismic assessment of strategic buildings for emergency management, on buildings for public use, including schools (Ordinances of school buildings 3728/08)	These ordinances did not bring the expected result
2009	L'Aquila	5.9	??	The L. 77/09 (art. 11) provides a Plan and a Fund for seismic risk reduction to be implemented through annual Ordinances from 2010 to 2016	The emergency process had a Central management (State). The law 77/09 implemented projects for non-temporary anti seismic housing (CASE project), whose localization often derogated from urban plans, and from provisions of territorial development
2012	Emilia Veneto Lombardia		??	In the L. 134/12 (art. 10) it is expected that the MAP (temporary housing modules) would be settled in "priority areas" identified in the emergency plans, which will keep their emergency land-use attribution even after the removal of the temporary housing	